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Geology, Metallogeny and Petrogenesis of the East Bull Lake Intrusion, Ontario

by

D.C. Peck, R.S. James, P.T. Chubb, S.A. Prevec and R.R. Keays

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DEDICATION

This report is dedicated to the memory of Dr. Choudari Kamineni, who maintained an enthusiasm toward this project that was an inspiration to all of those who followed in his footsteps. Choudari was a gifted scientist and, foremost, a kind and generous person, a true gentleman, and he is sadly missed.

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Geology, Metallogeny and Petrogenesis of the East Bull Lake Intrusion, Ontario

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INTRODUCTION

The 2.48 Ga East Bull Lake intrusion (EBLI) is situated approximately 80 km to the west of Sudbury in the central part of Ontario (*see* Map P.3274 in back pocket, and figure 1). The EBLI is 22 km long, 5 km wide and on average >1 km thick, and consists of two discrete magma chambers that are connected by a dike-like intrusive body. The EBLI is the best documented example of a cogenetic suite of rift-related, Paleoproterozoic layered complexes that were emplaced into NeoArchean metaplutonic rocks of the Superior Province.

This report provides an overview of the results obtained from a four year investigation of the geology, mineral potential and petrogenesis of the EBLI (1990-94). A comprehensive reporting of the results of the EBLI study are provided elsewhere (see references provided herein). The major objectives of the current report are: (1) To summarize, with the aid of the 1:20 000 scale geological compilation map for the EBLI (*see* Map P.3274 in back pocket), the most recent observations pertaining to the geology, lithostratigraphy and petrography of the EBLI; (2) To review the principal results of the mineral potential study; (3) To describe the major findings of several related geochemical and petrogenetic investigations of the EBLI; (4) To place the results of the EBLI study in a regional tectonic and metallogenic framework; and, (5) To provide a comprehensive tabulation of geochemical data acquired during the EBLI study.

The first part of this report provides an overview of the EBLI study. The second part of the report describes the geology, lithostratigraphy and petrography of the intrusion. The discussion brings together all of the major results of the EBLI study, and places them in a regional context. The appendices consist of geochemical data tables and explanatory notes, presented in hard copy and digital format (see enclosed diskette).

PROJECT SUMMARY

The EBLI study incorporates a series of inter-related field and laboratory investigations that were principally carried out by researchers at Laurentian University. Geoscientists from other universities, the minerals industry and government also participated in specific aspects of the research. The principal objectives of the EBLI study were to investigate the geology and petrogenesis of the EBLI, and assess the potential for Cu-Ni-PGE mineralization in the EBLI and neighbouring mafic intrusions occurring within Boon, Gerow, Lockeyer, Mandamin and Shibananing townships, Districts of Algoma and Sudbury. These objectives were realized following the completion of three summer mapping projects (described in Peck and James, 1990 and Peck *et al.*, 1992) and four years of related metallogenic and petrogenetic studies (*e.g.*, Peck *et al.*, 1993a, b; Chubb *et al.*, 1995a; Prevec *et al.*, in preparation). Two graduate theses contributed critical information to the EBLI study (Prevec, 1993; Chubb, 1994).

During the early stages of the EBLI study, technical support was provided by a group of independent explorationists who had staked and conducted surface exploration on most of the available ground underlain by the EBLI (M. Hauseux, S. Surmacz and E. Gallo). Drill core was provided by the Atomic Energy of Canada Ltd., who had undertaken a series of detailed geological studies of the EBLI during the 1980s. By 1992, INCO Exploration and Technical Services Ltd. had acquired or staked most of the ground in the Bull Lake area and thereafter completed line cutting, grid mapping, geophysical surveying (IP) and limited diamond drilling.

Detailed mapping and petrochemical studies conducted during this investigation facilitated the development of a "type" stratigraphy (Fig. 3) and a unified petrologic nomenclature for the EBLI (Peck *et al.*, 1993a, b; Chubb, 1994; Peck *et al.*, in preparation). These studies also allowed subdivision of the cumulate sequences making up the EBLI into four series (*see* Map P.3274 in back pocket, and figures 2 and 3), each of which contains two or more subunits (zones). The field studies were concentrated in the previously unmapped eastern part of the intrusion in order to complement earlier detailed accounts of the geology of the western part of the intrusion (Born, 1979; James and Born, 1985; McCrank *et al.*, 1982, 1989). Additional detailed mapping (at scales ranging from 1:100 to 1:1,000) and lithogeochemical studies were undertaken in the vicinity of Moon Lake, Goulding Lake and Nodule Pond (*see* Map P.3274 in back pocket), where good exposures of sulphide mineralization, nodular anorthosite or the marginal breccia unit (Border zone; see below) occur (Peck and James, 1992; Peck *et al.*, 1992, 1993b; Chubb, 1994).

Results from the mapping program demonstrated that the EBLI originally consisted of two discrete magma chambers that were linked by a dike-like intrusive body (*see* Map P.3274 in back pocket, and figures 1 and 2). A detailed investigation of the geology, metallogeny and petrogenesis of the eastern part of the intrusion, described by Chubb (1994), revealed that the EBLI was originally linked, by another dike-like intrusive body, to the larger Shakespeare-Dunlop intrusion (Fig. 1).

Collectively, the EBLI and the Shakespeare-Dunlop intrusion have been referred to as the "Savage Bull complex" (Chubb *et al.*, 1995b). A Ph.D. thesis (D.C. Vogel, University of Melbourne) dealing with with the geology, geochemistry and petrogenesis of the Shakespeare-Dunlop intrusion, initiated in 1992, is ongoing.

International interest in the potential applications for nodular-textured anorthosite from both the EBLI and the Shakespeare-Dunlop intrusion (Peck *et al.*, 1992) in the building stone industry prompted Manitou Stone Canada Ltd. to establish test quarries in both intrusions during 1992 and 1993. Concurrently, a detailed investigation of the petrology, mineralogy, geochemistry and crystallization of nodular anorthosite from the EBLI was completed (Chubb *et al.*, 1995a).

In 1991 and 1992, large pseudotachylyte veins, similar in appearance to Sudbury Breccia from the Sudbury Structure (*e.g.*, Dressler, 1984), were described in both the eastern part of the EBLI and the Shakespeare-Dunlop intrusion. Chubb *et al.* (1995b) present a detailed account of the distribution and petrology of these pseudotachylyte bodies.

A major component of the three year field program involved delineation and characterization of both magmatic and structurally-controlled sulphide mineralization in the EBLI. Results from these studies and concurrent exploration initiatives by the private sector identified a mappable zone of disseminated magmatic sulphides near the base of the intrusion and more massive, structurally-controlled sulphide mineralization within major shear zones (Peck *et al.*, 1992, 1993a, 1993b; Chubb, 1994). Petrographic and geochemical studies revealed that both types of mineralization typically have high Cu:Ni ratios and contain significant quantities of platinum-group elements (PGE, up to 18 ppm; see Peck *et al.*, 1993b and Appendix

5). Similar occurrences of disseminated Cu-Ni sulphide mineralization in the Shakespeare-Dunlop intrusion were explored by B.P. Resources Canada Ltd in 1990 and 1991 and are recognized in the southwestern part of the River Valley intrusion (see Fig. 1 for location).

Geochemical studies of the EBLI generated approximately 500 whole-rock major and trace element analyses (Appendices 1-4), 1000 chalcophile element (Pd, Pt, Au, Cu and Ni ± Co, S, Se, Bi, Os, Ir, Ru, Rh) analyses (Appendix 5), 56 rare-earth element (REE) analyses (Appendix 6) and in excess of 100 mineral analyses (Appendix 7 and Chubb, 1994). Additional geochemical data for the eastern part of the EBLI are reported by Chubb (1994). Radiogenic isotope data (Sm-Nd, Pb-Pb and Rb-Sr systems) and additional REE analyses for the EBLI are given by Prevec (1993).

As a result of the petrogenetic studies of the EBLI, two major papers are in preparation. Peck *et al.*, (in preparation) utilizes field and petrographic observations and major element geochemistry to elucidate the origin of the cumulate sequences, including their crystallization, textural development, layering and chemical compositions. The second paper (Prevec *et al.*, in preparation) utilizes radiogenic isotope and rare-earth element geochemistry to characterize the mantle source for the parental magmas for the intrusion and further refine the crystallization models.

During the final year of the EBLI study all of the data was compiled and placed in a regional context. The term Huronian-Nipissing magmatic belt (HNMB) was coined at this time, in order to describe the intrusive and volcanic products of a Paleoproterozoic (2.5-2.2 Ga) magmatic episode in central Ontario. The HNMB is one of several Paleoproterozoic magmatic belts that developed during a protracted period of rifting and mafic to ultramafic magmatism that affected most of the world's Archean cratons. In central Ontario, this magmatism began with the formation of 2.5 to 2.45 Ga mafic layered intrusions (EBL suite), diabase dikes (Matachewan and Hearst dike swarms; Fahrig, 1987) and mafic to felsic volcanic sequences (Huronian Supergroup; Bennett *et al.*, 1991), and culminated with the emplacement of the 2.2 Ga Nipissing diabase intrusions (Lightfoot and Naldrett, 1989). The HNMB is now recognized as a discrete metallogenic province for Cu, Co, Ni and PGE (Innes and Colvine, 1984; James *et al.*, 1994).

Additional publications dealing with the EBLI are forthcoming. Three studies are ongoing, *viz.*: (1) A detailed investigation of the chemistry and genesis of platinum-group minerals from the EBLI including the geology, petrology and geochemistry of the mineralized, Inclusion-Bearing zone in the eastern part of the EBLI (see Chubb, 1994); and, (2) An investigation of the geochemical characteristics and genesis of PGE-enriched sulphide mineralization in the EBLI.

GEOLOGY AND LITHOSTRATIGRAPHY

Map P.3274 is a 1:20,000 scale geological compilation map of the EBLI that incorporates results obtained during this study, mapping completed by INCO Exploration and Technical Services Ltd., and much earlier work conducted by the Atomic Energy of Canada Ltd. (McCrank *et al.*, 1982, 1989; Kamineni *et al.*, 1984) and geologists from Laurentian University (Born, 1979; James et al., 1983; James and Born, 1985). The following discussion directly relates to the geological information contained in Map P.3274 and the type stratigraphic section given in

Figure 3. A geological map showing the distribution of the four series constituting the stratigraphy of the intrusion is presented in Figure 2.

The EBLI records evidence of at least one major period of regional metamorphism and deformation that produced upper greenschist facies mineral assemblages and mineral foliations in most of the cumulate sequences. It is likely that the greenschist facies metamorphic overprint occurred during the regionally important Penokean Orogeny (*circa*. 1.8 - 1.9 Ga; Card, 1979). Detailed accounts of the metamorphic history of the EBLI are provided by Born (1979), Ercit (1980), Kamineni *et al.* (1984) and Chubb (1994).

Igneous layering in the EBLI generally strikes parallel to its margin and dips inward at 20-50 degrees. Layers are commonly cut by brittle to ductile shear zones and faults, including two major, complex deformation zones, *viz.*: the Folson Lake and Parisien Lake deformation zones (*see* Map P.3274 in back pocket). Most of the major, linear structures within the EBLI strike east-southeasterly or north-northeasterly. Detailed structural investigations of the EBLI are described by Kerrich *et al.* (1987), Chubb (1994) and in several of Atomic Energy of Canada Ltd.'s geological reports on the EBLI (*e.g.*, Ejeckam *et al.*, 1990).

The footwall of the EBLI comprises late Archean mafic to felsic metavolcanic rocks (unit 1,Map P.3274 in back pocket) belonging to the Whiskey Lake greenstone belt (Jensen, 1990) and younger intermediate to felsic gneisses (unit 2, Map P.3274 in back pocket) and granite-syenite intrusions belonging to the Ramsey-Algoma granitoid complex (Card, 1979; James et al., 1983; Jackson and Fyon, 1991). Inclusions of all of these rock types are locally present within marginal phases of the EBLI.

The EBLI comprises four major stratigraphic subdivisions (series), *viz.*, the Marginal Series, the Lower Series, the Main Series and the Upper Series (Fig. 3). Their distribution in the intrusion is shown in Figure 2. The complete stratigraphy is developed in the western part of the EBLI. In the eastern part of the intrusion, both the Upper Series and the Olivine Gabbronorite zone (Fig. 3) of the Main Series are absent.

The Marginal Series includes a locally well developed intrusive breccia known as the Border zone (unit 4, Map P.3274 in back pocket), and a zone of relatively massive, fine- to coarse-grained gabbroic rocks (Gabbronorite zone: unit 5, Map P.3274 in back pocket). The Border zone is best developed immediately to the east of Moon Lake in the western part of the EBLI (*see* Map P.3274 in back pocket). It is typically several tens of metres thick and consists of variable proportions of deformed, locally derived footwall xenoliths (tonalitic gneiss, granite, syenite, or mafic metavolcanic rocks) set in a fine- to medium-grained matrix of anorthosite, leucogabbronorite and gabbronorite veins. The veins range from several centimetres to several metres in width and display complex cross-cutting relationships and a wide range in chemical composition (Table 1). Detailed mapping revealed that the largest veins are most commonly orientated at right angles (or nearly so) to the contact between the Marginal Series and the Lower Series. The relative abundance and average grain size of the veins increases from the base to the top of the Border zone, such that the lower part of the zone has a gradational boundary with the footwall rocks and contains only a few percent of vein material, and the upper part of the zone contains <10% footwall xenoliths and grades into the overlying cumulate sequences (Gabbronorite zone or Anorthosite zone). Rare pod-like bodies of plagioclase cumulates are locally present within the Border zone (Peck *et al.*, 1992). In addition, the zone contains or is intruded by both plagioclase-phyric and aphyric diabase dikes. Pyrite- and/or pyrrhotite-rich disseminated sulphide mineralization is locally developed in gabbroic veins and larger, cumulate-textured gabbroic bodies within the Border Zone.

Detailed mapping of the Border zone (Peck *et al.*, 1992) indicates that it represents an igneous breccia in which felsic footwall rocks were fractured and milled during emplacement of the mafic magmas that formed the EBLI. Small amounts of granophyre which surrounds some of the footwall xenoliths may have resulted from partial melting during formation of the Border zone. Quartz-bearing gabbronorite (Table 1) is locally developed in the Border zone and likely represents a hybrid rock type resulting from mixing between granophyric partial melts and the mafic parent magmas of the EBLI. The Border zone is interpreted as the feeder complex for the EBLI. Peck *et al.* (1992) and Chubb (1994) provide a more detailed description of this zone.

The Gabbronorite zone of the Marginal Series occurs almost exclusively in the eastern part of the EBLI (*see* Map P.3274 in back pocket; and Chubb, 1994). It commonly forms a metre-wide, dike-like body that typically displays sharp, planar contacts with both the overlying cumulates and underlying Border zone or Archean basement rocks. Locally, the Gabbronorite zone forms a thicker unit (up to ten metres thick) that displays irregular internal grain size and modal variations. Typically, the Border zone and Gabbronorite zone are not observed together. In a few locations, gabbroic veins emanating from the Gabbronorite zone intrude the overlying Lower Series rocks. Grain sizes tend to increase from the margins towards the centre of the Gabbronorite zone, where a fine- to medium-grained gabbronorite is developed. These features suggest efficient heat transfer to surrounding country rocks. In comparison to the overlying cumulate sequences of the EBLI, the Gabbronorite zone is texturally homogeneous and is only rarely transected by dikes. Rare rounded pods of medium- to coarse-grained gabbronorite and leucogabbronorite are developed within the Gabbronorite zone. The pods display both sharp and gradational contacts with the surrounding host material. In the Nodule Pond area (*see* Map P.3274 in back pocket), the Gabbronorite zone contains clasts derived from the overlying Inclusion-Bearing zone, indicating that at this location, the Gabbronorite zone was emplaced following the consolidation of the overlying cumulate rocks.

The cumulate rocks of the EBLI are subdivided into three series (Lower, Main, Upper; Fig. 2 and 3). The Lower Series is a 50 m- to 450 m-thick succession that includes the Inclusion-Bearing zone (unit 6, Map P.3274 in back pocket) and the overlying Anorthosite zone (unit 7, Map P.3274 in back pocket).

The Inclusion-Bearing zone is best developed in the eastern part of the EBLI (*see* Map P.3274 in back pocket), where it forms a 30 m-thick package that is further divided into the Inclusion-bearing gabbronorite unit and the Inclusion-bearing leucogabbronorite unit (*see* Map P.3274 in back pocket; and Chubb, 1994). The two subunits share a gradational contact and are petrologically similar; they are distinguished by the fact that anorthosite inclusions only occur in the Inclusion-bearing leucogabbronorite unit. The Inclusion-Bearing zone represents a chaotic unit (typically <10 m thick) made up of cm- to m-wide inclusions (up to 15%) of coarse-grained anorthosite cumulates, irregularly-shaped pods of pyroxenite and has a medium- to coarse-grained leucogabbronorite matrix which itself displays complex internal compositional variations. At one locality (south end of Goulding Lake, Map P.3274 in back pocket) the matrix consists of interfingering layers and laminae having thicknesses of less than one metre, compositions ranging from melanogabbronorite to gabbroic anorthosite and wavy contacts (Chubb, 1994). These features are interpreted as having formed by repeated influxes of small volumes of magma along the temporary floor of the EBLI. The pyroxenite pods locally form layer-like bodies up to a metre wide and several metres long (Chubb, 1994). Most of the pyroxenite pods occur as clusters of smaller pods (<1 m in diameter) that crystallized prior to the enclosing leucogabbronorite matrix.

To date, disseminated PGE-Cu-Ni mineralization, commonly developed within the matrix of the Inclusion-Bearing zone (Peck *et al.*, 1992, 1993a,b), has been the principal exploration target in the EBLI (Peck *et al.*, 1993a; Chubb, 1994). The characteristics and genesis of the mineralization, described only briefly in this report (see below), are discussed in detail by Peck *et al.* (1993a) and Chubb (1994).

Most of the plagioclase-rich inclusions within the Inclusion-Bearing zone were apparently derived from the overlying Anorthosite zone. Many of these inclusions exhibit spheroidal shapes that are typical of the Nodular Anorthosite unit (unit 7a, Map P.3274 in back pocket), which is only developed in the narrow dike-like parts of the EBLI (*see* Map P.3274 in back pocket). The nodular anorthosite unit contains coarse-grained spheroidal aggregates of randomly oriented plagioclase set in a medium- to coarse-grained, leucogabbro to pyroxenite matrix. Individual nodules reach 15 cm in diameter. Field observations and geochemical data were used to model the genesis of the nodular anorthosite unit (Chubb *et al.*, 1995a). The models predict that these rocks crystallized in response to enhanced undercooling of mafic parent magma in the dike-like constrictions of the EBLI. Undercooling promoted heterogeneous nucleation of plagioclase on pre-existing plagioclase primocrysts, and led to the formation of small polycrystalline plagioclase nodules. Individual nodules coalesced to form larger spheroids, a response to capillary forces arising from the presence of both Mg- and Fe-rich intercumulus liquids and unfractionated parent liquids in the pore spaces between the primary nodules. Compaction promoted further welding of the nodules and an irregular distribution of mafic residual magma within the unit.

In the western part of the EBLI, the Anorthosite zone typically consists of massive, coarse-grained anorthosite and leucogabbronorite (unit 7b, Map P.3274 in back pocket). A striking feature of some parts of the Anorthosite zone is the presence of irregularly-shaped and unevenly-distributed cm- to m-thick pyroxenite bodies (*e.g.*, Moon Lake area; see Peck *et al.*, 1992). These pyroxenite bodies are petrologically and geochemically similar to pyroxenite pods occurring within the Inclusion-Bearing zone.

The Main Series of the EBLI incorporates: (1) The 100 to 200 m thick Leucogabbronorite zone, comprising a massive to layered, coarse-grained leucogabbronorite unit (unit 8a, Map P.3274 in back pocket) overlain by an unlayered compositionally similar sequence (unit 8b, Map P.3274 in back pocket); (2) The Rhythmically-Layered zone (unit 9, Map P.3274 in back pocket), a 100 m- to 300 m thick succession comprising alternating decimetre- to decametre-scale layered rhythmic units and massive, homogeneous leucogabbronorite layers; and, (3) T Olivine Gabbronorite zone (unit 10, Map P.3274 in back pocket), an approxima

50 m thick, rhythmically-layered sequence comprising 10 cm to 50 cm thick olivine norite, leuconorite and gabbronorite layers.

Within both the Rhythmically-Layered zone and the layered parts of the Leucogabbronorite zone, individual layered units comprise thinner leucogabbronorite layers (rarely grading to anorthosite) and thicker gabbronorite layers (locally grading to melanogabbronorite, and rarely, pyroxenite), both of which may contain cumulus olivine. In both of these units, layering is developed on centimeter, metre and decamter scales, and grain size-graded and modally-graded layers are locally developed. Textural layering is also locally developed, comprising coarse-grained to pegmatitic leucogabbronorite layers and finer-grained mafic layers. Layer contacts are typically abrupt and planar, with the exception of the modally-graded layers. Flow foliations, defined by the alignment of cumulus plagioclase crystals, are rarely observed in the Rhythmically-Layered zone.

Within the Olivine Gabbronorite zone, typical rhythmic units consist of a basal olivine (gabbro)norite layer, an overlying leuco(gabbro)norite layer and an upper gabbronorite layer. Layers are typically a few centimetres thick and have abrupt and planar contacts. The layers consist of cumulus plagioclase and olivine and later formed orthopyroxene and clinopyroxene oikocrysts.

Disseminated Fe-Cu-Ni sulphide mineralization locally occurs in each of the three zones within the Main Series, being most abundant in the Leucogabbronorite zone. However, significant PGE enrichment is only observed in sulphide-bearing rocks from the Olivine Gabbronorite zone and rarely, in plagioclase cumulates from the Leucogabbronorite zone.

The Upper Series of the EBLI comprises the Layered Gabbronorite zone (unit 11, Map P.3274 in back pocket), the coarse-grained to pegmatitic vari-textured Gabbronorite Zone (unit 12, Map P.3274 in back pocket), and the fine- to medium-grained Massive Gabbronorite zone (unit 13, Map P.3274 in back pocket). The Layered Gabbronorite zone has a maximum thickness of 200 m and commonly displays excellent modal and textural layering. Locally-developed irregular layering, involving erosional layer contacts, clast-rich units, truncated layers and resorptional lithologic contacts, provides evidence for turbulent flow, current activity and late injections of magma during the crystallization of this zone (see also Kamineni *et al.*, 1984). The Layered Gabbronorite zone typically consists of thick (tens of metres) massive, coarse-grained leucogabbronorite layers alternating with modally-layered leucogabbronorite-gabbronorite rhythmic units in which cm- to m-scale layering is developed. The Layered Gabbronorite zone is subdivided into western and eastern subzones; there is a greater abundance of plagioclase-rich rocks in the western subzone (Appendix 1; Map P.3274 in back pocket).

Rocks of the vari-textured Gabbronorite Zone occur throughout the EBLI but are most abundant between Moon Lake and Folson Lake in the western part of the intrusion (*see* Map P.3274 in back pocket), where they form a discrete layer that is several tens of metres thick. In this zone vari-textured gabbronorite commonly forms irregular veins and pseudo-layers (generally <1 m thick) that display extremely large variations in grain size (fine-grained to pegmatitic) over small distances (*i.e.* centimetres). Dendritic textures, involving radial aggregates of bladed pyroxene or (less commonly) plagioclase crystals, and crescumulate (harrisitic) layering in which elongated pyroxene crystals are orientated with their long axes perpendicular to the pocket) intrude all of the EBLI cumulate sequences. Geochemically, these dikes are most similar to rocks from the Massive Gabbronorite zone and accordingly, could represent late differentiates of the parent magma to the EBLI. Geochronological studies are required to determine if the aphyric diabase dikes are part of the Matachewan-Hearst swarm.

Three gabbroic sills occurring to the north of the EBLI (Fig. 1) were investigated as part of the current study . These include the Tee Lake, Splake Lake and Barrow Lake intrusions (Peck *et al.*, 1993b). The sills are characterized by an absence of layering, pervasive sub-ophitic textures and relatively high Mg/Fe ratios. As such, they are readily distinguished from the EBLI. They are, however, strikingly similar to Nipissing diabase intrusions occurring in the Bull Lake area (Moore and Armstrong, 1943; Peck *et al.*, 1993b) and are tentatively correlated to the Nipissing diabase suite. In 1992, the potential for Cu-Ni-PGE mineralization in these sills was investigated by Mr. D.L. Prior, who suggested that the pervasive occurrence of hypersthene in the sills precluded the possibility that they are part of the Nipissing diabase suite (written communication, 1993). However, this suggestion is not consistent with the well established fact that most Nipissing diabase sills have one or more hypersthene-rich zones (*e.g.*, Lightfoot and Naldrett, 1989). Although petrochemical data from this study suggest that the Tee Lake, Barrow Lake and Splake Lake intrusions are part of the Nipissing diabase suite, a geochronological study is required to firmly establish their age.

PETROGRAPHY OF THE CUMULATE SEQUENCES

Detailed petrographic studies of the major cumulate units were undertaken in order to elucidate the primary crystallization order for the EBLI. In this regard, the replacement of the primary mafic minerals by their metamorphic equivalents (calcic amphiboles; see Chubb, 1994) proved troublesome, but in most cases, relict igneous textures and calculations of normative mineral compositions (Appendix 1) enabled a sensible estimate of original igneous mineral assemblages. Plagioclase is the principal cumulus phase throughout the EBLI, forming subhedral to euhedral, tabular crystals that are commonly poikilitically enclosed by later-formed (postcumulus) pyroxenes, titaniferous magnetite and, locally, plagioclase-quartz symplectites. Locally, both plagioclase and pyroxene display euhedral morphologies that suggest cotectic crystallization of these phases. In very rare instances (*e.g.*, pyroxenite pods, Lower Series), pyroxene appears to precede plagioclase on the liquidus (*e.g.*, in pyroxenite pods from the Inclusion-Bearing zone). Wherever primary mineral assemblages are preserved, textural relationships clearly indicate that orthopyroxene crystallized prior to clinopyroxene, and that magnetite, quartz-plagioclase symplectites and apatite were the last minerals to crystallize. Both quartz and quartz-plagioclase symplectites locally replace plagioclase along grain margins. These relationships are attributed to relatively low-temperature reactions (deuteric or metamorphic) between a fluid phase and original feldspar crystals.

In most samples, the largest (cumulus) plagioclase crystals contain a calcic core (commonly in the range An_{65} to An_{80}; see Appendix 7) that displays sharp to irregular boundaries with later-formed and locally zoned rims of more sodic plagioclase (An_{50}

layer contacts, are commonly associated with varitextured gabbronorite bodies in the EBLI. Irregular, small concentrations of granophyre and Ti-magnetite commonly occur as interstitial phases within this rock type. The textural diversity displayed by rocks of the vari-textured Gabbronorite Zone is attributed to crystallization from water-rich residual liquids.

The uppermost member of the cumulate stratigraphy is the Massive Gabbronorite zone. It consists of homogeneous, fine- to medium-grained gabbronorite that commonly contains up to several percent quartz in both the mode and the norm (unit 13, Appendix 1). This unit is interpreted to represent a late differentiate of the EBLI and is most extensively developed in the westernmost part of the intrusion (*see* Map P.3274 in back pocket).

Several varieties of mafic dikes are recognized in the Bull Lake area (McCrank *et al.*, 1989). Two of these appear to represent conduits for some of the parent magmas for the EBLI, including: (1) a medium-grained, hypidiomorphic granular gabbronorite dike occurring to the north of Folson Lake (unit 14a, Map P.3274 in back pocket); and, (2) a suite of northwest-striking plagioclase-phyric diabase dikes (unit 14b, Map P.3274 in back pocket; see also, McCrank *et al.*, 1982). Both field observations and geochemical data suggest that these dikes are cogenetic with the cumulate sequences in the EBLI. The plagioclase-phyric diabase dikes are believed to be part of the Matachewan-Hearst dike swarm (Halls and Bates, 1990) which has a similar age (2.45 Ga; U-Pb zircon age, Heaman, 1988) to the EBLI. The chemical composition of one of these dikes (sample 91DCP-291, Table 1) has been used as an estimate of the parent magma to most of the EBLI cumulates (see Discussion section, below). Equigranular, aphyric diabase dikes (unit 14c, Map P.3274 in back to An_{70}). These textures are suggestive of a multi-stage growth process, whereby the later-formed plagioclase rims developed by heteradcumulus growth (Irvine, 1982) from intercumulus liquids. However, it is not clear from petrographic studies alone whether the early-formed plagioclase crystals (cores) grew within the chamber as cumulus phases or were carried into the chamber as primocrysts that formed at deeper crustal levels. Pseudomorphs of Ca-amphibole after olivine (James and Born, 1985; Ercit, 1980) are observed in the lower parts of the cumulate succession where olivine occurs as a cumulus phase in both the Lower and Main Series.

Within the Olivine Gabbronorite zone and parts of the Rhythmically-Layered zone, unaltered primary mineral assemblages are commonly observed. These assemblages record cotectic crystallization of cumulus plagioclase and olivine. Rarely, fine-grained, euhedral plagioclase crystals are completely enclosed by olivine, which may suggest that plagioclase began to crystallize at slightly higher temperatures than olivine. Both plagioclase and olivine are enclosed by poikilitic orthopyroxene and later-formed clinopyroxene. A reaction (peritectic) relationship is commonly observed between olivine and orthopyroxene yielding corona-like structures (James and Born, 1985).

The petrography of the cumulate sequences of the EBLI is consistent with a model in which most of the intrusion crystallized from plagioclase-bearing magmas that continued to crystallize plagioclase until reaching a cotectic composition (plagioclase + olivine or plagioclase + orthopyroxene). Clinopyroxene and Fe-Ti oxides occur exclusively as postcumulus minerals in most parts of the EBLI. Postcumulus mineral abundances are typically in excess of 20 modal %, so that adcumulus processes are generally not required to account for the textural diversity of the EBLI. In this context, most of the rocks are mesocumulates or orthocumulates (Irvine, 1982). The geochemistry of the rocks is defined by the composition and relative proportions of cumulus minerals and trapped residual liquid.

DISCUSSION

PGE-Enriched Cu-Ni Sulphide Mineralization

The distribution of magmatic and structurally-controlled, PGE-enriched, Cu-Ni sulphide mineralization in the EBLI is shown on Map P.3274 (in back pocket). The characteristics of the mineralization are described by Peck *et al.* (1993a, b) and Chubb (1994). The structurally-controlled mineralization has not been investigated in detail and will not be considered further in this report.

One of the focal points of the EBLI study has been the careful documentation of the distribution, mineralogy and chalcophile element geochemistry of its magmatic sulphide occurrences. These sulphides are sporadically developed in the gabbroic to pyroxenitic matrix of plagioclase-rich cumulates from the lower part of the Anorthosite zone, but occur in greatest abundance in a variety of gabbroic rock types that form the matrix of the Inclusion-Bearing zone. PGE-enriched sulphide mineralization is present in most of the melanogabbronorite and pyroxenite pods in the Lower Series. It also occurs, to a lesser extent, in mafic veins and local pod-like bodies of cumulates in the Border zone.

Typically, the sulphides form <1 cm diameter, rounded to irregularly-shaped aggregates of pyrrhotite, chalcopyrite and subordinate pentlandite, and occur in abundances ranging from 0.2 to 2%. Pyrite is locally a major component of the sulphide mineralization in the Border zone, and its presence is generally consistent with low PGE concentrations in the host rocks.

Platinum-group minerals occur in, or proximal to, sulphide minerals and, like the sulphides, appear to have been recrystallized during metamorphism. The most common PGE-bearing minerals are Pd-Bi-Te compounds and sperrylite ($PtAs_2$). Rare primary textures indicate that the magmatic sulphides crystallized from Cu-rich immiscible sulphide liquid droplets that were entrained within gabbroic intercumulus liquids.

The geochemical composition of the magmatic sulphides, though highly variable, is characterized by high Cu:Ni (>3:1) and Pd:Pt ratios (averaging 3:1). Mineralized samples from the Lower Series contain up to 1% Cu, 0.7% Ni and 18 ppm PGE. A maximum of 0.2 weight percent PGE are present in the sulphide fraction of these rocks (Peck *et al.*, 1993a). There are few significant correlations between the grade or metal ratios of the mineralization and its detailed stratigraphic position, host rocks, or abundance. The absence of good correlations is partly attributed to variable modification of the sulphide compositions by metamorphism. An attempt was made to screen the samples for alteration using the S/Se ratio, which is known to be a very sensitive indicator of hydrothermal and metamorphic alteration of magmatic sulphides. However, even when only the unaltered samples were examined, genetically informative correlations were not obtained. It is concluded that the lack of inter-element correlations is a primary feature of the mineralization that must be explained by any proposed genetic models.

Absence of drill hole information and appropriate geophysical data for the EBLI precludes development of a three dimensional model for the disseminated sulphide mineralization. Based on the available surface assays (see Appendix 5 and Chubb, 1994), no chemical zoning was observed within the mineralized sequences, but sample spacing was extremely irregular, reflecting the availability of outcrop. High PGE concentrations are recorded in sulphide-bearing rocks from many different areas within the Lower Series. The maximum PGE grades are reported in massive anorthosite samples from the Anorthosite Zone (two samples with >10 ppm combined Pd + Pt) in which sulphides are barely visible in hand specimen. In the Moon Lake area, sulphide-bearing, plagioclase-rich rocks from the Lower Series consistently yield anomalously high PGE concentrations, typically in excess of 1 ppm. In comparison, sulphide-bearing rocks from the Border zone having equivalent S contents typically display much lower PGE, Cu and Ni abundances, and generally higher Ni:Cu ratios.

The following considerations are advanced as the principal constraints on any genetic interpretation of the PGE-enriched magmatic sulphides in the EBLI: (1) In order to explain the high PGE tenors, S-saturation must have occurred during the early stages of crystallization, and involved a PGE-enriched, Ni-depleted high-Al magma such as the proposed model parent liquids for the EBLI (see below); (2) The most likely triggering mechanisms for S-saturation in the EBLI are rapid cooling and assimilation of small amounts of silica-rich country rock during the initial emplacement of the parent magmas into the Archean basement; (3) The presence of relatively PGE- and base metal-impoverished sulphides in the veins of the Border zone is difficult to relate to the Cu and PGE rich sulphides in the Lower Series rocks which show the expected relationship between fractionated sulphide paragenesis in a host silicate rock that exhibits a similar degree of fractionation ; (4) The strongly cumulate and weakly layered nature of the Lower Series is consistent with vigorous convection of Al-rich magmas, which could have kept immiscible sulphide droplets in suspension for long periods of time, affording them the opportunity to scavenge PGE from large volumes of silicate magma; (5) The paucity of sulphides in the middle and upper parts of the EBLI is believed to reflect a gradual decline in the S tenor of the resident magma in the chamber (owing to separation of immiscible sulphide liquids in the deeper parts of the chamber).

Above the Lower Series, sulphides are much less abundant and where present, are commonly not strongly enriched in PGE. One exception to this is the PGE-enrichment associated with trace amounts of Cu and Ni sulphides within the Olivine Gabbronorite zone, where ppm abundances of PGE are observed in association with trace amounts of base metal sulphides in olivine + plagioclase cumulates. This mineralization has not been explored; its distribution, average grade and origin should be established.

Petrogenesis of the East Bull Lake Intrusion

Field and petrographic observations from the EBLI highlight the important role of plagioclase crystallization during the formation of the intrusion. Textural evidence suggests that for the most part, plagioclase was the only mineral phase on the liquidus during the very early stages of crystallization, and was later joined by olivine and orthopyroxene. Both average and representative geochemical compositions for the EBLI (Table 1 and Peck *et al.*, in preparation) were used to conduct graphical analyses of fractionation trends for the EBLI, using Pearce element ratio diagrams (Peck *et al.*, in preparation; Chubb, 1994). Results from these analyses confirmed that nearly all of the geochemical variation in the EBLI cumulates can be explained by fractional crystallization of plagioclase from evolved, Al-rich gabbroic parent magmas. Fractional crystallization of mafic phases was only important during the formation of the Olivine Gabbronorite zone and the pyroxenite pods in the Inclusion-Bearing zone. The low Mg, Cr and Ni concentrations and high Al-abundances of the EBLI cumulates and proposed parent liquids (Table 1) require that the primary, mantle-derived liquids to which the the intrusion ultimately relates, underwent an early stage of olivine and pyroxene fractionation at depth. The only rock type having a composition that could have been in equilibrium with an upper mantle source is melanogabbronorite from fine-grained veins in the Border zone. However, the age of these veins is not known.

The increased abundance of pyroxene in the Main and Upper Seriesis relative to the Lower Series is consistent with crystallization from floor to roof, and a gradual depletion of plagioclase-forming elements in the resident magma. As the EBLI cooled and crystallized, fractional crystallization may have become less effective owing to less vigorous convection. When the resident magma reached a cotectic composition (plagioclase + olivine or plagioclase + orthopyroxene), in situ, equilibrium crystallization appears to have become the dominant crystallization process. In the lower parts of the intrusion, vigorous convection and higher rates of heat loss in a less fractionated, hotter, Al-rich resident magma promoted rapid growth of plagioclase and accumulation of relatively coarse-grained deposits (=Lower Series) of plagioclase on the temporary floor of the intrusion. Water- and Fe-enriched residual magmas were continually channeled toward the roof of the intrusion and formed late, varitextured gabbronorite veins and the chemically evolved Upper Series rocks.

The parent magma composition for the EBLI has been estimated from studies of mafic dikes in the region and calculation of the volumetrically-weighted bulk composition of the intrusion (Peck *et al.*, in preparation). These estimated compositions are given in Table 1. They are similar to Al-rich and Ti-poor tholeiites, although the extremely high Al concentrations are only rarely reported from analysed basalt sequences (one example being high-Al basalts from the Huronian Supergroup; see Innes, 1978). A comparison with other layered intrusions (Table 1) shows that the proposed Al-rich parent magma composition for the EBLI is strikingly similar to the parent liquid for the Upper Series of the Bushveld complex of South Africa (Hatton, 1989) and the summed bulk composition of the Archean Bad Vermillion Lake anorthosite complex of Ontario (Ashwal *et al.*, 1983).

Using the estimated parent liquid compositions for the EBLI, a series of mathematical solutions for the crystallization history were calculated (Peck *et al.*, in preparation). The solutions adequately explain most of the observed mineralogical, geochemical and textural characteristics of the EBLI, and are consistent with geological constraints derived from field and petrographic observations, which require: (1) Large amounts of plagioclase fractional crystallization; (2) A plagioclase → plagioclase + olivine → plagioclase + orthopyroxene → plagioclase + orthopyroxene + clinopyroxene + magnetite crystallization order; (3) Variable amounts of undercooling; (4) Generation of significant volumes of mafic residual liquid; (5) Variable amounts of mixing between residual liquids and cumulus minerals; and, (6) Development of late-stage overgrowths on cumulus plagioclase crystals from intercumulus liquids. Our calculations indicate that the observed stratigraphy records the effects of a gradual (upward) cooling of the resident magma and sympathetic compositional evolution (to more Fe- and incompatible element-rich compositions). Most of the rocks crystallized at temperatures below 1250°C, and were more or less completely crystallized at approximately 1100°C.

The irregular pyroxenite bodies that occur near the base of the intrusion (Lower Series) may have formed as pyroxene cumulates from orthopyroxene+plagioclase cotectic liquids initially interstitial to plagioclase in leuconorite/anorthosite rocks, or from parent magmas that crystallized pyroxene alone due to salic contamination arising from mixing with small amounts of footwall-derived siliceous partial melts.

Field observations suggest that compositional convection of mafic residual liquids was most efficient in the lower, plagioclase-rich parts of the EBLI. Good layering did not develop until the resident magma in the chamber had cooled and evolved to more mafic compositions, at which point plagioclase and a mafic phase were coprecipitated. Modally graded layering may have resulted from gravitational sorting of relatively dense, mafic residual liquids from relatively light cumulus plagioclase crystals within individual magma layers. Centimetre- and metre-scale phase and rhythmic layering appears to reflect oscillations about the plagioclase + orthopyroxene and plagioclase + olivine cotectic boundaries and variations in the amount of trapped liquid within individual depositional units (layers). Larger-scale compositional variations in the EBLI record major additions of parent liquid into the chambers (*e.g.*, base of Olivine Gabbronorite zone).

Rare-earth element geochemistry (Appendix 6) and radiogenic isotope geochemistry were used to place additional constraints on the petrogenesis of the EBLI (Prevec, 1993; Prevec *et al.*, in preparation). Mathematical simulations of the crystallization of the EBLI based on rare-earth elements (REE) yield similar results to those obtained from major element geochemistry. However, the REE data suggest that the EBLI cumulates contain greater proportions of trapped liquid than predicted by the major element models. In this context, the REE calculations, being more sensitive to the chemical effects imposed on the cumulates by variable amounts of trapped liquid, are favoured.

The EBLI cumulates display relative enrichment in the more incompatible REE (*e.g.*, La, Ce, Sm) and display negatively sloping profiles on chondrite-normalized REE plots (Peck *et al.*, 1993b; Prevec, 1993). These profiles are believed to represent an artifact of the upper mantle source for the EBLI primary liquids, such that subsequent fractional crystallization did not alter the slope of the REE profiles, but did elevate the absolute abundances of the REE. Large positive or negative Eu anomalies are a common feature of the EBLI cumulates and reflect the fractional crystallization of plagioclase. Negative Ti anomalies observed in many of the rocks, combined with Sm-Nd isotopic evidence and relatively high background PGE abundances, suggest that the upper mantle source for the EBLI had been previously melted (Peck *et al.*, 1993a, b; Prevec *et al.*, in preparation). Neither the major and trace element geochemistry nor the REE and radiogenic isotope geochemistry indicate substantial in situ crustal melting and assimilation. However, assimilation of lower crustal material with a composition similar to that of the Levack Gneiss of the Sudbury region, possibly within deep seated magma chambers, is consistent with the

REE modelling and radiogenic isotope abundances of the EBLI (Prevec *et al.*, in preparation).

Regional Synthesis

The EBLI records a major episode of continental-rift magmatism that produced layered mafic and ultramafic complexes, several major diabase dike swarms and associated flood basalt sequences in many of the world's Archean cratons (Alapieti *et al.*, 1990; Fahrig, 1987). In Ontario, the products of this tectonomagmatic activity, including the EBL suite of intrusions, the Matachewan-Hearst dike swarm, the Huronian Supergroup volcanic sequences and the Nipissing diabase intrusions, are collectively referred to as the Huronian-Nipissing magmatic belt (HNMB; Peck *et al.*, 1993b). Petrogenetic and radiogenic isotopic studies of the HNMB (Krogh *et al.*, 1984; Jolly, 1987; Lightfoot and Naldrett, 1989; Nelson *et al.*, 1990; Prevec, 1993; Peck *et al.*, in preparation; Prevec *et al.*, in preparation) suggest that: (1) the EBL suite of intrusions, the Huronian Supergroup basalts and many of the Matachewan-Hearst dikes were not only coeval (*ca.* 2.50-2.45 Ga), but also cogenetic; (2) Collectively, these three mafic suites record a similar fractional crystallization sequence which produced mafic cumulates, dikes and lava flows with compositions ranging from Al-rich (high-temperature) to Fe-rich (lower-temperature); and, (3) Most of the mafic igneous rocks in the HNMB appear to have crystallized from fractionated, primary basaltic liquids that formed by partial melting of incompatible-element enriched but previously melted upper mantle.

In general, the EBLI becomes more mafic and chemically more evolved from base to top. The ferrogabbroic rocks that locally occur at the top of the EBLI (unit 13, Appendix 1) appear to represent ideal parent magma compositions for coeval, Fe-rich tholeiitic basalts from the Huronian Supergroup (Innes, 1978). Several layered mafic complexes of the EBL suite are directly overlain or proximal to the Huronian basalts (*e.g.*, Drury and May Townships; see Card, 1978 and Prevec, 1993), and in these areas, the proposed genetic link can be evaluated. Both field and geochemical observations from the current study suggest that some of the Matachewan-Hearst dikes are genetically related to the EBL suite of intrusions.

The only reported ultramafic cumulates amongst the EBL suite of intrusions occurs in the northern part of the River Valley pluton where they occur as as a minor rock type (Ashwal and Wooden, 1989). The River Valley pluton is the largest of the EBL suite of intrusions and the only mafic-ultramfic intrusion. The ultramafic cumulates are potentially very significant as they may record the early stages of fractionation of the parent liquids for the EBL suite of intrusions, and could yield additional constraints on the composition of the primary magmas and mantle source(s) for these plutons.

Most of the known EBL suite of intrusions occur within a 200 km long arcuate belt that straddles both the Southern Province - Superior Province and Southern Province - Grenville Province boundary zones (Fig. 1). However, petrologically similar and possibly coeval anorthositic rocks also occur in the Cobalt-Timiskaming area (J. Ireland, Resident Geologist, Cobalt District, written communication, 1992) and to the east of Sault Ste. Marie, along the north shore of Lake Huron (Bennett *et al.*, 1991). The Fort Knox intrusion in Fawcett Township, approximately 90 km north of the main east-west trending belt of EBL suite intrusions, is also believed to be part of the EBL suite (W. Peredery, INCO Exploration and Technical Services, personal communication, 1993).

Additional EBL-suite intrusions occur in the immediate footwall of the Sudbury Igneous Complex (SIC) (Prevec, 1993). The suggestion that some of these bodies contained proto-ore and may have played a key role in determining the location of the sulphide ore bodies associated with the SIC is intriguing (Peck *et al.*, 1993a). In this regard, we observed cumulate sequences, intrusive breccias and disseminated sulphide occurrences, apparently analogous to those developed in the Lower and Marginal Series of the EBLI, in the Wisner Township intrusion; this body is an EBL-suite intrusion that occurs in the North Range of the Sudbury Structure (Bedrock geology of Ontario, east-central sheet; Ontario Geological Survey, Map 2543). A massive sulphide body occurs at the contact between this body and the sub-layer of the SIC; a detailed examination of this mineralization should be undertaken in order to assess the extent to which the metals and sulphur contained in it were derived from the Wisner Township intrusion.

Innes and Colvine (1984) first recognized the fact that the Early Proterozoic rocks of the Sudbury region were a distinct metallogenic province. They pointed out that both the Nipissing diabase intrusions and the Huronian Supergroup volcanic sequences host numerous Cu-Ni-PGE (Nipissing intrusions) or volcanogenic Cu (Huronian basalts) occurrences. Results from the current study confirmed that both the EBL suite of intrusions and the Nipissing diabase sills contain low S tenors, high background PGE abundances and low-Ti contents; all of the essential characteristics of so-called "second-stage magmas" from which most of the world's major PGE deposits were formed (Hamlyn and Keays, 1986). In the case of the EBLI, the

Shakespeare-Dunlop intrusion and the River Valley pluton, this favourable geochemistry and a combination of magmatic processes were translated into the development of PGE-enriched, disseminated Cu-Ni sulphide mineralization along the margins of these bodies. Despite recent exploration efforts, it remains unclear whether there are any areas in these or related intrusions where this type of disseminated PGE-Cu-Ni mineralization can be profitably mined. Likewise, there is no clear indication, either from theory or exploration results, whether mineable, PGE-rich, massive Cu-Ni sulphide deposits are developed in these intrusions. To date, sub-economic massive sulphide mineralization has been identified in shear zones cutting the EBLI (see above) and in a breccia-hosted pyroxene-sulphide body within the Fort Knox intrusion (Peng *et al.*, in preparation).

Paleoproterozoic mafic-ultramafic complexes in Scandinavia, in contrast to those in the HNMB, have received a great deal of attention from the exploration industry, resulting in the discovery of many significant mineral deposits (*e.g.*, Kemi chromite mine, PGE reefs in the Penikat intrusion). By analogy with coeval and geologically similar layered intrusions from Finland, and based on metallogenic studies of the HNMB, the following types of deposits are most likely to occur in the HNMB intrusions: (1) Large tonnage, PGE-enriched, disseminated Cu-Ni sulphide deposits near the floors of the EBL suite intrusions; (2) Massive, PGE-bearing Cu-Ni sulphide deposits in the footwall or in embayment structures along the floors of the EBL suite of intrusions; (3) Skarn-type polymetallic deposits and massive, magmatic Cu-Ni sulphide deposits in Nipissing sills that have intruded carbonate rocks of the Huronian Supergroup; (4) Reef-type PGE and PGE-chromite deposits in the River

Valley complex or other EBL suite plutons in which both mafic and ultramafic cumulate sequences are developed.

The impetus for additional investigations of the HNMB has been slow to arise, despite its known mineral potential and the many fundamental geological problems that remain to be solved in the belt. Additional exploration and detailed geological and geochemical investigations will be required before a clear picture of the metallogeny and tectonomagmatic evolution of the HNMB can emerge.

CONCLUSIONS

The major results from our investigation of the geology, metallogeny and petrogenesis of the East Bull Lake intrusion are summarized below:

(1) The EBLI is part of an elongate intrusive complex (Savage Bull Complex) that was originally emplaced as three discrete but interconnected magma chambers;

(2) A stratigraphic nomenclature that is applicable to both the eastern and western lobes of the EBLI has been established;

(3) The lowermost stratigraphic units in the EBLI contain PGE-enriched disseminated Cu-Ni sulphide mineralization. To date, exploration of this mineralization has not satisfactorily addressed its economic potential nor the likelihood of other styles of PGE and Cu-Ni mineralization in the EBLI and related layered complexes (*e.g.*, massive Cu-Ni sulphides and reef-type PGE deposits). The extremely high PGE tenors observed in some of the

mineralization appears to reflect efficient scavenging of these metals by immiscible, Cu-rich sulphide liquids within a vigorously convecting body of PGE-enriched parental magma;

(4) The petrology and major element geochemistry of the EBLI have been explained by fractional crystallization models which incorporate multiple injections of Al-rich, tholeiitic basalt parent magma. These models suggest that most of the EBLI cumulates formed from magmas whose bulk composition initially fell within the plagioclase liquidus volume, and gradually evolved to plagioclase + olivine or plagioclase + orthopyroxene cotectic compositions;

(5) Most of the petrological and geochemical characteristics of the EBLI cumulate sequences can be ascribed to prolonged plagioclase crystallization and mixing between early-formed plagioclase crystals and mafic residual (intercumulus) liquids;

(6) There is no compelling evidence of widespread in situ crustal assimilation during the emplacement of the EBLI. However, small degrees of partial melting of granitic footwall xenoliths occurred within the marginal breccia unit (Border zone) and may have contributed to the development of immiscible sulphides in the first magmas to enter the chamber;

(7) Enhanced undercooling of the EBLI parental magmas within the constriction linking the two lobes of the intrusion promoted rapid cooling and heterogeneous nucleation of plagioclase, leading to the development of the nodular anorthosite unit;

(8) Similar estimates of parental magma compositions for the EBLI have been derived from a volumetrically-weighted average composition for the western

lobe of the intrusion and an analysis of a probable feeder dike. The proposed parental magma composition is an Al-rich and Ti-poor, tholeiitic basaltic liquid that is similar to the estimated parent magma compositions for several other plagioclase-rich layered complexes;

(9) Petrogenetic models based on the rare-earth element geochemistry suggest that the parental magmas for the EBLI were variably contaminated during their ascent through the lower crust. The Sm-Nd isotopic data indicate that the primary liquids for the EBLI were developed from an upper mantle reservoir that was LREE-enriched and had already experienced partial melting, probably during the NeoArchean; and,

(10) The EBLI is a component of the Early Proterozoic (2.5-2.2 Ga) Huronian-Nipissing magmatic belt (HNMB) of central Ontario. Geological and geochemical evidence suggests that the EBLI and coeval layered mafic complexes appear to be genetically linked to spatially associated and coeval basalt sequences within the Huronian Supergroup and the extensive Matachewan-Hearst dike swarm. Many of the mafic intrusions within the HNMB have good potential to host PGE-Cu-Ni deposits and warrant additional exploration.

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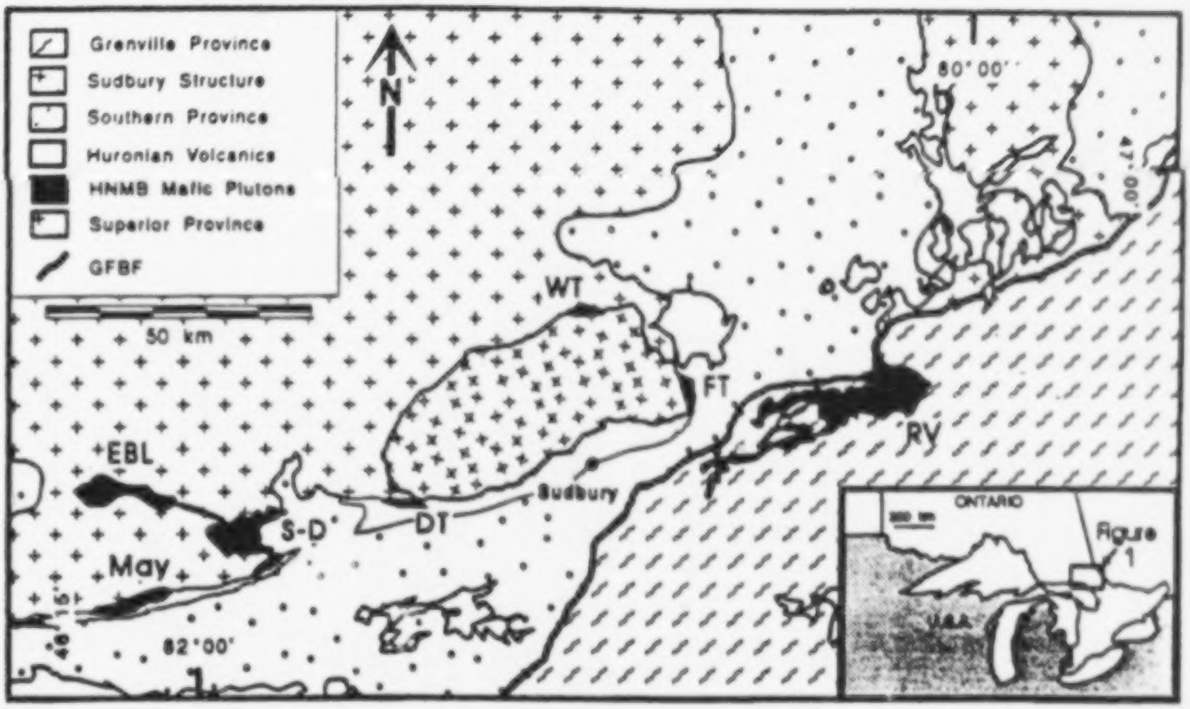

EBLI, Peck et al.

Figure 1. Location of Early Proterozoic layered complexes in the Huronian-Nipissing magmatic belt, central Ontario. DT = Drury Township intrusion; EBLI = East Bull Lake Intrusion. FT = Falconbridge Township intrusion; May = May Township intrusion; S-D = Shakespeare-Dunlop intrusion; WT = Wisner Township intrusion; RV = River Valley pluton.

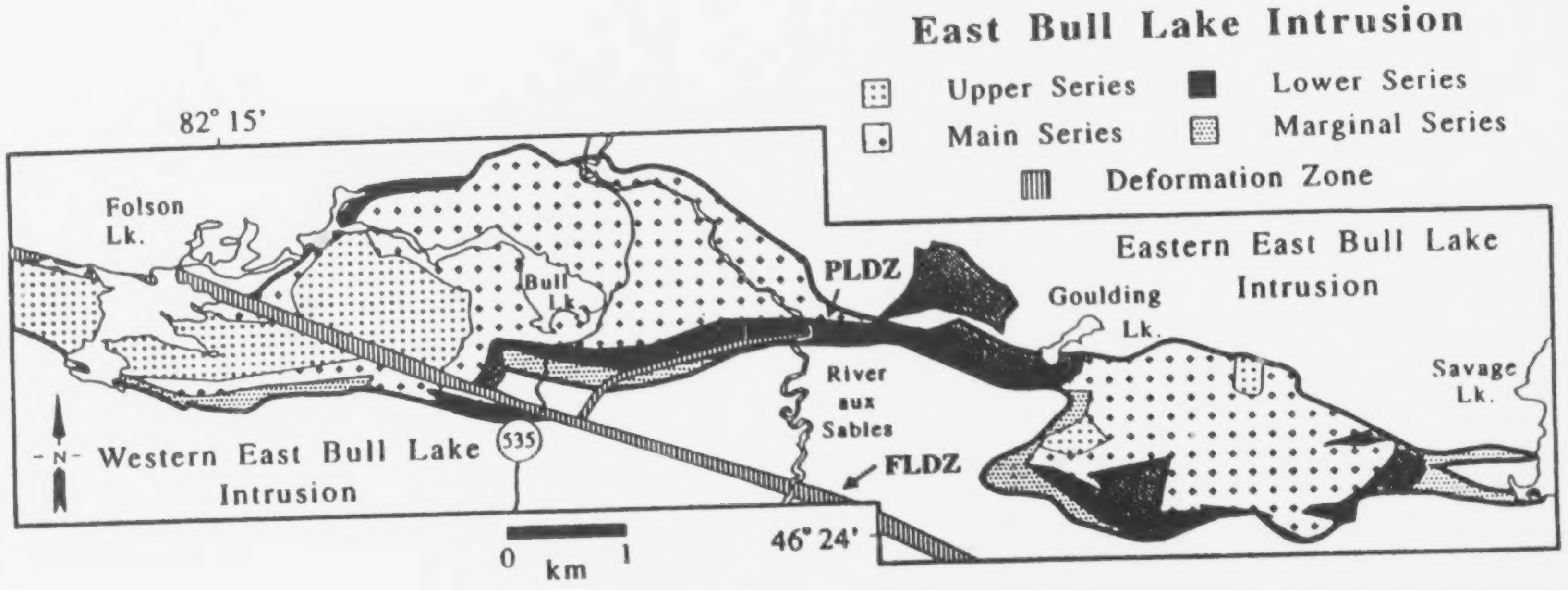

Figure 2. General geology of the East Bull Lake intrusion. PLDZ = Parisien Lake deformation zone; FLDZ = Folson Lake deformation zone.

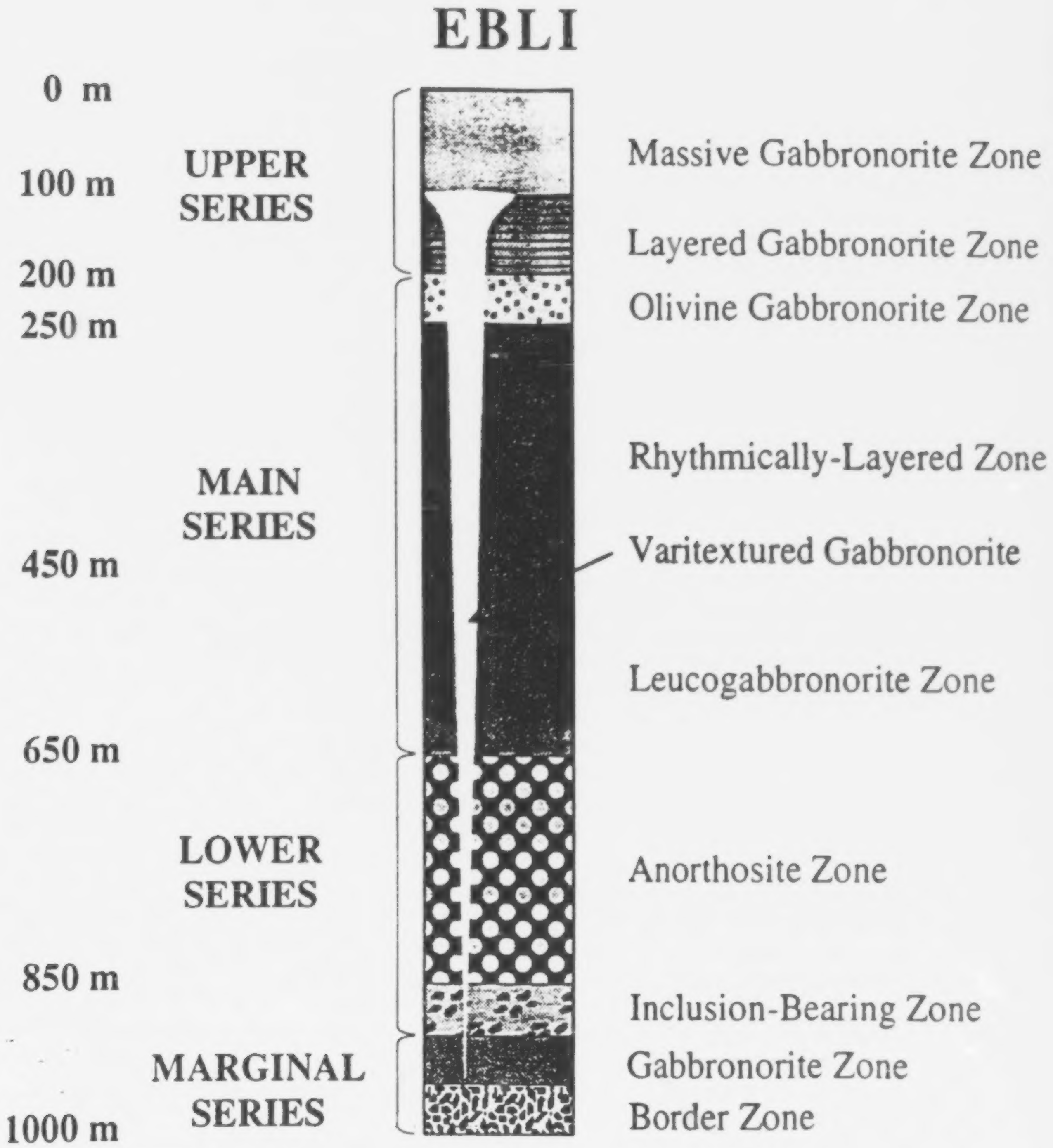

Figure 3. Type stratigraphic section for the East Bull Lake intrusion. Modified after Peck *et al.* (1993a) and Chubb (1994). Total depth and relative thicknesses of the units is schematic, but is based upon measured thicknesses in drill holes and from surface mapping.

Table 1. Representative and average whole-rock geochemical analyses and estimated parent magma compositions for the East Bull Lake Intrusion and selected additional Precambrian layered complexes

EXPLANATORY NOTES TO ACCOMPANY APPENDICES

Table 1 and the seven appendices are provided in both hard copy and digital format. The enclosed diskette contains the following 16 files: EBLA1.TXT to EBLA7.TXT; EBLA1.WK3 to EBLI7.WK3; EBLT1.TXT and EBLT1.WK3. Appendices 1 through 7 (hard copy) correspond to files EBLIA1 to A7, respectively. File EBLT1 corresponds to Table 1. The .TXT extension denotes comma delimited text files (ASCII format). The .WK3 extensions denote LOTUS 123 spreadsheet files (release 3.4, for DOS). Files EBLIA1 to EBLIA4 present whole-rock geochemical analyses for surface and drill core samples collected during the EBLI study. File EBLIA1 provides data for samples collected from the cumulate sequences of the EBLI. Files EBLIA2, EBLIA3 and EBLIA4 present data for the Border zone (a complex intrusive breccia that separates the cumulate sequences from the footwall rocks), selected mafic dikes and sills from the Bull Lake area, and footwall units, respectively. File EBLIA5 presents chalcophile element analyses for the EBLI, including analyses for the PGE, Au, S, Se, Bi, Cu, Ni and Co. File EBLIA6 presents REE data for a wide variety of rock types from the Bull Lake area. File EBLIA7 provides mineral analyses for core samples obtained from drill hole EBL1.

The data contained in the Appendices were sorted using four sorting criteria that were ranked, in order of decreasing importance, as follows: Unit Number; Rock Type (NAME 1); Location 1 (western or eastern EBLI); Sample#. All of the samples are given a topographic reference (based upon the universal topographic meridian (UTM) co-ordinate system, and given in metres) and, where possible, one or two geographic references (*i.e.*, Location 1 designates whether the sample was collected from the western part of the EBLI (WEBLI) or eastern part of the EBLI (EBLI); Location 2 identifies the nearest significant topographic feature, road, study site, or drill hole number). The "Unit" heading refers to the applicable map unit number for the sample, as listed in the Legend for Map P.3274.

In most cases, two rock type names are provided. NAME 1 represents rock names based on hand sample ± petrographic descriptions, whereas NAME 2 (where applicable) is derived from the normative mineral compositions. Both rock type designations are based on I.U.G.S. guidelines (see Peck *et al.*, 1993b and Chubb, 1994 for additional explanation). Note that it was generally not possible to distinguish between gabbro, norite and gabbronorite in the field, so that the term gabbro, as used in the Appendices, may refer to any one of these three rock types (keeping in mind that gabbronorite is by far the most common gabbroic rock type in the EBLI). "Hybrid" refers to rocks interpreted to represent the crystalline product of a mixture of gabbroic and siliceous magmas. Drill core samples were collected from diamond drill hole numbers EBL1, EBL2 and EBL4 (*see* Map P.3274 in back pocket). The core was provided by the Atomic Energy of Canada Ltd., and is described in Ejeckam *et al.* (1990) or reports referenced therein. In some of the tables, the depth of the core samples (always given in metres) is listed under the column heading "UTM - East" (no "UTM - North" co-ordinate is given for these samples).

Most of the major and trace element analyses (including Cu, Ni, Co and S) were carried out at the Central Analytical Facility of Laurentian University (core samples) and the Ontario Geoservices Centre (Sudbury), using a combination of X-ray fluorescence spectrometry (XRF), atomic absorption spectrometry (AAS), and infrared-emission spectroscopy. Selenium and Bi were determined by hydride AAS at the Geoscience Laboratories. Most of the PGE analyses for surface samples were determined by graphite furnace AAS at the Geoscience Laboratories; however, approximately 100 Pd, Pt and Au analyses were performed by Xray Assay Laboratories, Don Mills, Ontario, using instrumental neutron activation analysis. Drill core samples were analysed for PGE by radiochemical neutron activation analysis techniques at the University of Melbourne. Fifteen total PGE and Au determinations were performed at the University of Saskatchewan (see Appendix 5; these are the only samples for which Ir, Ru, Rh, Pt, Pd and Au abundances are reported), using an inductively coupled plasma-mass spectrometer (ICP-MS) technique.

Rare-earth element analyses were performed by ICP-MS at the Geoscience Laboratories. Mineral compositions were determined using a Cameca SX-50 electron microprobe at the University of Melbourne. Analytical techniques and precision are described in Peck *et al.* (1993b) and Chubb (1994). Analytical precision is typically better than ±20% for REE, PGE, Au, Se and Bi, ±5% for trace and minor elements and ±2% for major elements (*i.e.*, elements with abundances of >5 weight %). Blank spaces in the data tables indicate that no determination was made for this sample.

Elemental abundances are reported as follows: Major elements, S, LOI (=loss on ignition) and CO_2 - weight %; Trace elements, REE, Se and Bi - ppm; Pd, Pt, Au, Os, Ir, Ru, Rh - ppb. Normative mineral abundances are given in mole percentages (normalized to 100%); NPC = normative plagioclase composition, NCI = normative colour index. The Mg# was calculated using the following equation:

$$Mg\# = 100(MgO/(MgO+FeO))$$

where MgO and FeO are given as mole fractions, and FeO (weight %) = $0.8998*Fe2O3$ (weight %).

The following table provides a list of abbreviations used in the Appendices.

HEADING	ABBREVIATION	EXPLANATION
LOC'N 1	WEBLI	western part of the EBLI
LOC'N 1	EEBLI	eastern part of the EBLI
LOC'N 1	TLI	Tee Lake intrusion
LOC'N 1	BLI	Barrow Lake intrusion
LOC'N 1	SLI	Splake Lake intrusion
LOC'N 2	PLDZ	Parisien Lake deformation zone
ASSOC'N	MH Swarm	Matachewan-Hearst dike swarm
NAME	A	Anorthosite
NAME	AG	Anorthositic Gabbro
NAME	BAS	Basalt
NAME	D	Diabase
NAME	DAC	Dacite
NAME	DG	Dendritic Gabbro
NAME	G	Gabbro
NAME	GA	Gabbroic Anorthosite
NAME	GDI	Granodiorite
NAME	GR	Granite
NAME	LG	Leucogabbro
NAME	MG	Melanogabbro
NAME	MOG	Melanocratic Olivine Gabbronorite
NAME	MS	Mafic Schist
NAME	MT or Magt	Magnetite
NAME	P	Pyroxenite
NAME	SY	Syenite
NAME	T	Tonalite

The following abbreviations for textural and mineral modifiers were also used in the Appendices: i = inclusion; n = nodular; O = olivine; p = pegmatitic; q = quartz-bearing; sn = semi-nodular; vt = varitextured; y = porphyritic.

APPENDIX 1. Whole-rock geochemistry of cumulate rocks from the East Bull Lake intrusion.

Part A. Reference information. See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-300	EEBLI	Site 5	6b	yG	AG		412620	5142110
90DCP-304	EEBLI	Site 5	6b	snLG	AG		412590	5142125
90DCP-313	EEBLI	Site 5	6b	snG	AG		412535	5142130
90DCP-314	EEBLI	Site 5	6b	snG	AG		412535	5142130
90DCP-315	EEBLI	Site 5	6b	snG	AG		412535	5142110
90DCP-318	EEBLI	Site 5	6b	snG	AG		412555	5142085
90DCP-320	EEBLI	Site 5	6b	snG	AG		412595	5142090
90DCP-322	EEBLI	Site 5	6b	G	AG		412605	5142085
90DCP-327	EEBLI	Site 5	6b	snG	AG		412620	5142085
90DCP-330	EEBLI	Site 5	6b	snG	AG		412635	5142100
90DCP-331	EEBLI	Site 5	6b	LG	AG		412645	5142065
90DCP-332	EEBLI	Site 5	6b	G	AG		412600	5142045
90DCP-333	EEBLI	Site 5	6b	G	AG		412580	5142070
90DCP-335	EEBLI	Site 5	6b	snLG	AG		412640	5142045
90DCP-336	EEBLI	Site 5	6b	snLG	AG		412635	5142025
90DCP-337	EEBLI	Site 5	6b	snG	AG		412615	5142025
90DCP-339	EEBLI	Site 5	6b	snG	AG		412590	5142010
90DCP-340	EEBLI	Site 5	6b	snG	AG		412585	5142020
90DCP-321	EEBLI	Site 5	6b	G	G		412600	5142080
90DCP-323	EEBLI	Site 5	6b	G	G		412610	5142085
90DCP-324	EEBLI	Site 5	6b	G	G		412615	5142090
90DCP-292	EEBLI	Site 5	7a	nLG	GA		412660	5142120
90DCP-298	EEBLI	Site 5	7a	nG	GA		412625	5142110
90DCP-307	EEBLI	Site 5	7a	nLG	GA		412580	5142140
90DCP-309	EEBLI	Site 5	7a	nLG	GA		412575	5142140
90DCP-317	EEBLI	Site 5	7b	snG	GA		412530	5142100
90DCP-047	WEBLI	Moon Lk.	7b	A	A		408460	5141950
91DCP-112	WEBLI	DDH#EBL1	7b	A	A	638.78		
90DCP-236	WEBLI	Bull Lk.	7b	A	GA		406180	5144050
90DCP-360	WEBLI	Parisien Lk.	7b	snLG	GA		410280	5141100
90DCP-361	WEBLI	Parisien Lk.	7b	snLG	GA		410410	5141100
90DCP-376	WEBLI	Moon Lk.	7b	G	GA		407500	5141320
90DCP-400	WEBLI	Parisien Lk.	7b	A	GA		409260	5141610
90DCP-408	WEBLI	Parisien Lk.	7b	LG	GA		408990	5141660
91DCP-111	WEBLI	DDH#EBL1	7b	GA	GA	623.24		
91DCP-113	WEBLI	DDH#EBL1	7b	GA	GA	644.09		
91DCP-114	WEBLI	DDH#EBL1	7b	GA	GA	648.76		
91DCP-115	WEBLI	DDH#EBL1	7b	GA	GA	650.07		
91DCP-116	WEBLI	DDH#EBL1	7b	GA	GA	652.16		
91DCP-119	WEBLI	DDH#EBL1	7b	GA	GA	657.72		
91DCP-121	WEBLI	DDH#EBL1	7b	GA	GA	662.47		
91DCP-124	WEBLI	DDH#EBL1	7b	GA	GA	689.25		
91DCP-131	WEBLI	DDH#EBL1	7b	GA	GA	708.40		
91DCP-133	WEBLI	DDH#EBL1	7b	GA	GA	719.45		
91DCP-179A	WEBLI	DDH#EBL4	7b	GA	GA	418.00		
90DCP-044	WEBLI	Moon Lk.	7b	G	AG		407970	5140630

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-045	WEBLI	Moon Lk.	7b	snLG	AG		408040	5140695
90DCP-046	WEBLI	Moon Lk.	7b	A	AG		408460	5141950
90DCP-073	WEBLI	Bull Lk.	7b	LG	AG		407700	5144200
90DCP-074	WEBLI	Bull Lk.	7b	G	AG		407660	5144280
90DCP-081	WEBLI	Bull Lk.	7b	G	AG		407600	5144000
90DCP-234	WEBLI	Bull Lk.	7b	LG	AG		406220	5143910
90DCP-235	WEBLI	Bull Lk.	7b	A	AG		406250	5144010
90DCP-238	WEBLI	Bull Lk.	7b	LG	AG		406120	5143910
90DCP-240	WEBLI	Bull Lk.	7b	G	AG		406050	5143690
90DCP-359	WEBLI	Parisien Lk.	7b	vtLG	AG		410140	5141100
90DCP-372	WEBLI	Moon Lk.	7b	LG	AG		407690	5141480
90DCP-392	WEBLI	Moon Lk.	7b	LG	AG		407790	5142030
90DCP-393	WEBLI	Moon Lk.	7b	LG	AG		407740	5141990
90DCP-394	WEBLI	Moon Lk.	7b	LG	AG		407820	5141900
91DCP-117	WEBLI	DDH#EBL1	7b	AG	AG	652.70		
91DCP-120	WEBLI	DDH#EBL1	7b	AG	AG	660.46		
91DCP-123	WEBLI	DDH#EBL1	7b	AG	AG	684.22		
91DCP-125	WEBLI	DDH#EBL1	7b	AG	AG	693.30		
91DCP-126	WEBLI	DDH#EBL1	7b	AG	AG	695.05		
91DCP-132	WEBLI	DDH#EBL1	7b	AG	AG	712.68		
91DCP-134	WEBLI	DDH#EBL1	7b	AG	AG	720.30		
91DCP-135	WEBLI	DDH#EBL1	7b	AG	AG	726.75		
91DCP-137	WEBLI	DDH#EBL1	7b	AG	AG	738.98		
91DCP-139	WEBLI	DDH#EBL1	7b	AG	AG	745.17		
91DCP-140	WEBLI	DDH#EBL1	7b	AG	AG	750.83		
91DCP-141A	WEBLI	DDH#EBL1	7b	AG	AG	758.53		
91DCP-141B	WEBLI	DDH#EBL1	7b	AG	AG	754.13		
91DCP-142	WEBLI	DDH#EBL1	7b	AG	AG	762.15		
91DCP-179C	WEBLI	DDH#EBL4	7b	AG	AG	417.00		
91DCP-179D	WEBLI	DDH#EBL4	7b	AG	AG	416.50		
90DCP-043	WEBLI	Moon Lk.	7b	G	G		407890	5140560
90DCP-239	WEBLI	Bull Lk.	7b	G	G		406080	5143770
91DCP-110	WEBLI	DDH#EBL1	7b	G	G	616.55		
91DCP-118	WEBLI	DDH#EBL1	7b	G	G	654.67		
91DCP-127	WEBLI	DDH#EBL1	7b	G	G	701.02		
91DCP-128	WEBLI	DDH#EBL1	7b	G	G	701.48		
91DCP-129	WEBLI	DDH#EBL1	7b	G	G	701.80		
91DCP-136	WEBLI	DDH#EBL1	7b	G	G	731.79		
91DCP-138	WEBLI	DDH#EBL1	7b	G	G	742.22		
91DCP-143	WEBLI	DDH#EBL1	7b	G	G	768.05		
91DCP-179B	WEBLI	DDH#EBL4	7b	G	G	417.50		
91DCP-130	WEBLI	DDH#EBL1	7b	MG	MG	702.05		
91DCP-094	WEBLI	DDH#EBL1	8	GA	GA	443.47		
91DCP-095	WEBLI	DDH#EBL1	8	GA	GA	448.86		
91DCP-096	WEBLI	DDH#EBL1	8	GA	GA	479.38		
91DCP-097	WEBLI	DDH#EBL1	8	GA	GA	482.65		
91DCP-104	WEBLI	DDH#EBL1	8	GA	GA	516.90		

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
91DCP-105	WEBLI	DDH#EBL1	8	GA	GA	523.10		
90DCP-038	WEBLI	Bull Lk.	8	yG	AG		409610	5143010
90DCP-039	WEBLI	Bull Lk.	8	G	AG		409700	5142990
90DCP-040	WEBLI	Bull Lk.	8	G	AG		409800	5142950
90DCP-041	WEBLI	Bull Lk.	8	G	AG		409910	5142910
90DCP-071	WEBLI	Bull Lk.	8	G	AG		407780	5143960
90DCP-072	WEBLI	Bull Lk.	8	LG	AG		407780	5144090
90DCP-232	WEBLI	Moon Lk.	8	G	AG		406230	5143820
90DCP-265	WEBLI	Bull Lk.	8	G	AG		409850	5143570
90DCP-266	WEBLI	Bull Lk.	8	LG	AG		410310	5143150
90DCP-269	WEBLI	Bull Lk.	8	G	AG		410650	5143140
90DCP-270	WEBLI	Bull Lk.	8	LG	AG		410720	5143020
90DCP-398	WEBLI	Parisien Lk.	8	G	AG		409180	5141700
90DCP-415	WEBLI	Bull Lk.	8	smLG	AG		409780	5142410
90DCP-416	WEBLI	Bull Lk.	8	G	AG		409890	5142340
90DCP-418	WEBLI	Bull Lk.	8	G	AG		409950	5142320
90DCP-424	WEBLI	Bull Lk.	8	G	AG		407800	5143510
91DCP-092	WEBLI	DDH#EBL1	8	AG	AG	432.12		
91DCP-093	WEBLI	DDH#EBL1	8	AG	AG	437.57		
91DCP-098	WEBLI	DDH#EBL1	8	AG	AG	489.04		
91DCP-100	WEBLI	DDH#EBL1	8	AG	AG	496.45		
91DCP-101	WEBLI	DDH#EBL1	8	AG	AG	498.05		
91DCP-102	WEBLI	DDH#EBL1	8	AG	AG	504.96		
91DCP-103	WEBLI	DDH#EBL1	8	AG	AG	508.69		
91DCP-109	WEBLI	DDH#EBL1	8	AG	AG	613.40		
90DCP-070	WEBLI	Bull Lk.	8	G	G		407780	5143890
90DCP-231	WEBLI	Moon Lk.	8	G	G		406210	5143740
90DCP-262	WEBLI	Bull Lk.	8	G	G		409920	5143600
90DCP-267	WEBLI	Bull Lk.	8	LG	G		410300	5143150
90DCP-268	WEBLI	Bull Lk.	8	G	G		410300	5143090
90DCP-397	WEBLI	Parisien Lk.	8	G	G		408960	5141760
90DCP-399	WEBLI	Parisien Lk.	8	G	G		409220	5141640
90DCP-417	WEBLI	Bull Lk.	8	G	G		409950	5142290
91DCP-099	WEBLI	DDH#EBL1	8	G	G	491.14		
91DCP-106	WEBLI	DDH#EBL1	8	G	G	526.57		
91DCP-107	WEBLI	DDH#EBL1	8	G	G	611.65		
91DCP-108	WEBLI	DDH#EBL1	8	G	G	612.11		
90DCP-053	WEBLI	Moon Lk.	9	G	GA		407220	5143020
90DCP-054	WEBLI	Moon Lk.	9	G	GA		407190	5143000
90DCP-413	WEBLI	Bull Lk.	9	G	GA		409600	5142460
90DCP-419	WEBLI	Bull Lk.	9	smLG	GA		408750	5142280
90DCP-422	WEBLI	Moon Lk.	9	LG	GA		408460	5143050
91DCP-079A	WEBLI	DDH#EBL1	9	GA	GA	372.56		
91DCP-079B	WEBLI	DDH#EBL1	9	GA	GA	372.75		
91DCP-080	WEBLI	DDH#EBL1	9	GA	GA	374.49		
91DCP-082	WEBLI	DDH#EBL1	9	GA	GA	379.64		
90DCP-035	WEBLI	Bull Lk.	9	G	AG		407970	5144640

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-042	WEBLI	Bull Lk.	9	G	AG		409580	5143030
90DCP-052	WEBLI	Moon Lk.	9	yMG	AG		407290	5143080
90DCP-056	WEBLI	Moon Lk.	9	G	AG		407180	5142910
90DCP-057	WEBLI	Moon Lk.	9	G	AG		407130	5142850
90DCP-230	WEBLI	Bull Lk.	9	G	AG		406210	5143610
90DCP-242	WEBLI	Moon Lk.	9	G	AG		407660	5143270
90DCP-387	WEBLI	Moon Lk.	9	LG	AG		408060	5142270
90DCP-388	WEBLI	Moon Lk.	9	G	AG		408020	5142220
90DCP-389	WEBLI	Moon Lk.	9	G	AG		407980	5142180
90DCP-390	WEBLI	Moon Lk.	9	LG	AG		407900	5142170
90DCP-391	WEBLI	Moon Lk.	9	LG	AG		407800	5142100
90DCP-409	WEBLI	Bull Lk.	9	OG	AG		409390	5142580
90DCP-411	WEBLI	Bull Lk.	9	OG	AG		409520	5142530
90DCP-412	WEBLI	Bull Lk.	9	LG	AG		409550	5142510
90DCP-414	WEBLI	Bull Lk.	9	LG	AG		409640	5142440
90DCP-420	WEBLI	Bull Lk.	9	LG	AG		408660	5142400
90DCP-421	WEBLI	Bull Lk.	9	G	AG		408760	5142830
90DCP-425	WEBLI	Moon Lk.	9	LG	AG		407720	5143340
90DCP-426	WEBLI	Moon Lk.	9	LG	AG		407650	5143250
90DCP-427	WEBLI	Moon Lk.	9	G	AG		408100	5142990
90DCP-428	WEBLI	Moon Lk.	9	G	AG		408090	5142770
91DCP-047	WEBLI	DDH#EBL1	9	AG	AG	240.45		
91DCP-048	WEBLI	DDH#EBL1	9	AG	AG	242.62		
91DCP-049	WEBLI	DDH#EBL1	9	AG	AG	245.08		
91DCP-050	WEBLI	DDH#EBL1	9	AG	AG	250.55		
91DCP-052	WEBLI	DDH#EBL1	9	AG	AG	257.41		
91DCP-053	WEBLI	DDH#EBL1	9	AG	AG	261.66		
91DCP-054	WEBLI	DDH#EBL1	9	AG	AG	265.78		
91DCP-055	WEBLI	DDH#EBL1	9	AG	AG	267.60		
91DCP-068	WEBLI	DDH#EBL1	9	AG	AG	333.15		
91DCP-070	WEBLI	DDH#EBL1	9	AG	AG	337.60		
91DCP-071	WEBLI	DDH#EBL1	9	AG	AG	341.81		
91DCP-072	WEBLI	DDH#EBL1	9	AG	AG	345.28		
91DCP-075	WEBLI	DDH#EBL1	9	AG	AG	356.21		
91DCP-076	WEBLI	DDH#EBL1	9	AG	AG	360.08		
91DCP-078	WEBLI	DDH#EBL1	9	AG	AG	367.99		
91DCP-081	WEBLI	DDH#EBL1	9	AG	AG	377.75		
91DCP-083	WEBLI	DDH#EBL1	9	AG	AG	394.53		
91DCP-084	WEBLI	DDH#EBL1	9	AG	AG	395.83		
91DCP-085	WEBLI	DDH#EBL1	9	AG	AG	398.00		
91DCP-086	WEBLI	DDH#EBL1	9	AG	AG	400.23		
91DCP-087	WEBLI	DDH#EBL1	9	AG	AG	413.84		
91DCP-088	WEBLI	DDH#EBL1	9	AG	AG	416.83		
91DCP-089	WEBLI	DDH#EBL1	9	AG	AG	421.67		
91DCP-090	WEBLI	DDH#EBL1	9	AG	AG	425.62		
91DCP-091	WEBLI	DDH#EBL1	9	AG	AG	429.15		
90DCP-036	WEBLI	Bull Lk.	9	LG	G		407970	5144620

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-037	WEBLI	Bull Lk.	9	G	G		408040	5144630
90DCP-102	WEBLI	Folson Lk.	9	CG	G		409370	5142780
90DCP-198	WEBLI	Folson Lk.	9	G	G		403740	5151060
90DCP-199	WEBLI	Folson Lk.	9	G	G		403830	5141140
90DCP-200	WEBLI	Folson Lk.	9	CG	G		403940	5141200
90DCP-201	WEBLI	Folson Lk.	9	G	G		403970	5141240
90DCP-202	WEBLI	Folson Lk.	9	G	G		403860	5141260
90DCP-229	WEBLI	Bull Lk.	9	G	G		406230	5143520
90DCP-410	WEBLI	Bull Lk.	9	CG	G		409450	5142550
91DCP-051	WEBLI	DDH#EBL1	9	G	G	255.11		
91DCP-067	WEBLI	DDH#EBL1	9	G	G	330.95		
91DCP-069	WEBLI	DDH#EBL1	9	G	G	334.53		
91DCP-073	WEBLI	DDH#EBL1	9	G	G	349.89		
91DCP-074	WEBLI	DDH#EBL1	9	G	G	352.43		
91DCP-077	WEBLI	DDH#EBL1	9	G	G	364.79		
91DCP-032	WEBLI	DDH#EBL1	10	AG	AG	171.32		
91DCP-033	WEBLI	DDH#EBL1	10	AG	AG	175.95		
91DCP-037	WEBLI	DDH#EBL1	10	AG	AG	191.27		
91DCP-166	WEBLI	DDH#EBL2	10	CAG	AG	96.93		
91DCP-167	WEBLI	DDH#EBL2	10	CAG	AG	102.20		
90DCP-065	WEBLI	Moon Lk.	10	CG	G		407310	5142080
90DCP-066	WEBLI	Moon Lk.	10	CG	G		407310	5142100
91DCP-035	WEBLI	DDH#EBL1	10	CG	G	185.65		
91DCP-036	WEBLI	DDH#EBL1	10	CG	G	186.62		
91DCP-038	WEBLI	DDH#EBL1	10	CG	G	197.07		
91DCP-039	WEBLI	DDH#EBL1	10	G	G	200.24		
91DCP-040	WEBLI	DDH#EBL1	10	CG	G	201.47		
91DCP-041	WEBLI	DDH#EBL1	10	CG	G	209.40		
91DCP-162	WEBLI	DDH#EBL2	10	CG	G	57.82		
91DCP-163	WEBLI	DDH#EBL2	10	CG	G	71.99		
91DCP-164	WEBLI	DDH#EBL2	10	G	G	81.45		
91DCP-165	WEBLI	DDH#EBL2	10	CG	G	90.05		
91DCP-168	WEBLI	DDH#EBL2	10	CG	G	45.83		
91DCP-169	WEBLI	DDH#EBL2	10	CG	G	65.95		
91DCP-170	WEBLI	DDH#EBL2	10	CG	G	76.88		
91DCP-029	WEBLI	DDH#EBL1	10	MCG	MG	163.85		
91DCP-030	WEBLI	DDH#EBL1	10	MCG	MG	166.75		
91DCP-031	WEBLI	DDH#EBL1	10	MCG	MG	168.36		
91DCP-034	WEBLI	DDH#EBL1	10	MCG	MG	181.84		
91DCP-161	WEBLI	DDH#EBL2	10	MCG	MG	41.87		
90DCP-067	WEBLI	Moon Lk.	11a	G	GA		406930	5142670
90DCP-058	WEBLI	Moon Lk.	11a	G	AG		407000	5142820
90DCP-059	WEBLI	Moon Lk.	11a	G	AG		406660	5142980
90DCP-061	WEBLI	Moon Lk.	11a	LG	AG		406620	5142830
90DCP-062	WEBLI	Moon Lk.	11a	G	AG		406590	5142710
90DCP-068	WEBLI	Moon Lk.	11a	G	AG		406780	5142690
90DCP-069	WEBLI	Moon Lk.	11a	G	AG		406800	5142690

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-082	WEBLI	Moon Lk.	11a	G	AG		406530	5142390
91DCP-021	WEBLI	DDH#EBL1	11a	AG	AG	99.45		
91DCP-022	WEBLI	DDH#EBL1	11a	AG	AG	103.88		
91DCP-025	WEBLI	DDH#EBL1	11a	AG	AG	150.45		
91DCP-026	WEBLI	DDH#EBL1	11a	AG	AG	154.30		
91DCP-027	WEBLI	DDH#EBL1	11a	AG	AG	157.15		
90DCP-060	WEBLI	Moon Lk.	11a	MG	G		406640	5142910
90DCP-083	WEBLI	Moon Lk.	11a	G	G		406510	5142460
90DCP-084	WEBLI	Moon Lk.	11a	G	G		406490	5142540
90DCP-085	WEBLI	Moon Lk.	11a	G	G		406360	5142580
90DCP-086	WEBLI	Moon Lk.	11a	G	G		406390	5142580
90DCP-089	WEBLI	Moon Lk.	11a	G	G		406520	5142010
90DCP-090	WEBLI	Moon Lk.	11a	G	G		406420	5142010
91DCP-019	WEBLI	DDH#EBL1	11a	G	G	88.58		
91DCP-020	WEBLI	DDH#EBL1	11a	G	G	93.60		
91DCP-024	WEBLI	DDH#EBL1	11a	G	G	145.29		
91DCP-028	WEBLI	DDH#EBL1	11a	G	G	162.03		
90DCP-111	WEBLI	Folson Lk.	11b	A	A		401010	5143180
90DCP-170	WEBLI	Folson Lk.	11b	LG	GA		404850	5142930
90DCP-206	WEBLI	Folson Lk.	11b	pLG	GA		403730	5141600
90DCP-110	WEBLI	Folson Lk.	11b	LG	AG		401000	5142900
90DCP-112	WEBLI	Folson Lk.	11b	G	AG		401050	5143220
90DCP-162	WEBLI	Folson Lk.	11b	MG	AG		401950	5142200
90DCP-163	WEBLI	Folson Lk.	11b	G	AG		401950	5142120
90DCP-165	WEBLI	Folson Lk.	11b	G	AG		402260	5142810
90DCP-171	WEBLI	Folson Lk.	11b	LG	AG		404820	5142760
90DCP-178	WEBLI	Folson Lk.	11b	G	AG		404830	5142790
90DCP-191	WEBLI	Folson Lk.	11b	LG	AG		403370	5141930
90DCP-192	WEBLI	Folson Lk.	11b	LG	AG		403490	5141960
90DCP-203	WEBLI	Folson Lk.	11b	pLG	AG		403830	5141330
90DCP-204	WEBLI	Folson Lk.	11b	G	AG		403830	5141450
90DCP-205	WEBLI	Folson Lk.	11b	G	AG		403770	5141510
90DCP-207	WEBLI	Folson Lk.	11b	G	AG		403670	5141650
90DCP-221	WEBLI	Folson Lk.	11b	LG	AG		403390	5142610
90DCP-226	WEBLI	Folson Lk.	11b	G	AG		402130	5142860
90DCP-113	WEBLI	Folson Lk.	11b	G	G		401140	5143280
90DCP-115	WEBLI	Folson Lk.	11b	G	G		401160	5142820
90DCP-116	WEBLI	Folson Lk.	11b	smG	G		401000	5142680
90DCP-132	WEBLI	Folson Lk.	11b	G	G		401430	5143190
90DCP-134	WEBLI	Folson Lk.	11b	G	G		401680	5143080
90DCP-135	WEBLI	Folson Lk.	11b	G	G		401790	5143050
90DCP-166	WEBLI	Folson Lk.	11b	LG	G		404880	5143080
90DCP-169	WEBLI	Folson Lk.	11b	LG	G		404859	5143030
90DCP-173	WEBLI	Folson Lk.	11b	MG	G		404800	5142690
90DCP-175	WEBLI	Folson Lk.	11b	G	G		404730	5142320
90DCP-177	WEBLI	Folson Lk.	11b	G	G		404760	5142610
90DCP-193	WEBLI	Folson Lk.	11b	LG	G		403300	5142100

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-260	WEBLI	Moon Lk.	12	G	AG		406080	5142840
91DCP-009	WEBLI	DDH#EBL1	12	AG	AG	47.63		
91DCP-011	WEBLI	DDH#EBL1	12	AG	AG	56.45		
91DCP-012	WEBLI	DDH#EBL1	12	AG	AG	61.52		
91DCP-013	WEBLI	DDH#EBL1	12	AG	AG	67.35		
90DCP-087	WEBLI	Moon Lk.	12	DG	G		406780	5142420
90DCP-088	WEBLI	Moon Lk.	12	DG	G		406800	5142440
90DCP-104	WEBLI	Folson Lk.	12	DG	G		401050	5143300
90DCP-114	WEBLI	Folson Lk.	12	DG	G		401150	5143050
90DCP-117	WEBLI	Folson Lk.	12	DG	G		401130	5142670
90DCP-133	WEBLI	Folson Lk.	12	DG	G		401580	5143130
90DCP-160	WEBLI	Folson Lk.	12	DG	G		401880	5142310
90DCP-161	WEBLI	Folson Lk.	12	DG	G		401920	5142280
90DCP-172	WEBLI	Folson Lk.	12	DG	G		404780	5142710
90DCP-174	WEBLI	Folson Lk.	12	DG	G		404800	5142670
90DCP-176	WEBLI	Folson Lk.	12	DG	G		404750	5142390
90DCP-197	WEBLI	Folson Lk.	12	DG	G		403780	5140980
90DCP-250	WEBLI	Moon Lk.	12	G	G		406000	5143150
90DCP-251	WEBLI	Moon Lk.	12	G	G		406010	5142970
90DCP-252	WEBLI	Moon Lk.	12	DG	G		405980	5142860
91DCP-005	WEBLI	DDH#EBL1	12	G	G	32.00		
91DCP-006	WEBLI	DDH#EBL1	12	G	G	35.00		
91DCP-007	WEBLI	DDH#EBL1	12	G	G	39.10		
91DCP-008	WEBLI	DDH#EBL1	12	G	G	43.32		
91DCP-010	WEBLI	DDH#EBL1	12	G	G	49.98		
91DCP-015	WEBLI	DDH#EBL1	12	G	G	71.80		
91DCP-016	WEBLI	DDH#EBL1	12	G	G	75.55		
91DCP-017	WEBLI	DDH#EBL1	12	G	G	82.95		
91DCP-018	WEBLI	DDH#EBL1	12	MG	MG	85.70		
90DCP-123	WEBLI	Folson Lk.	13	G	AG		401280	5142980
90DCP-124	WEBLI	Folson Lk.	13	G	AG		401420	5142810
90DCP-127	WEBLI	Folson Lk.	13	G	AG		401440	5142880
90DCP-157	WEBLI	Folson Lk.	13	G	AG		401560	5142290
91DCP-002	WEBLI	DDH#EBL1	13	AG	AG	8.95		
91DCP-003	WEBLI	DDH#EBL1	13	AG	AG	11.13		
90DCP-091	WEBLI	Moon Lk.	13	G	G		406320	5142010
90DCP-093	WEBLI	Moon Lk.	13	G	G		406250	5142060
90DCP-094	WEBLI	Moon Lk.	13	G	G		406250	5142210
90DCP-095	WEBLI	Moon Lk.	13	G	G		406250	5142320
90DCP-096	WEBLI	Moon Lk.	13	G	G		406250	5142410
90DCP-121	WEBLI	Folson Lk.	13	G	G		401310	5142750
90DCP-122	WEBLI	Folson Lk.	13	G	G		401300	5142800
90DCP-126	WEBLI	Folson Lk.	13	G	G		401470	5142770
90DCP-128	WEBLI	Folson Lk.	13	DG	G		401470	5142940
90DCP-129	WEBLI	Folson Lk.	13	G	G		401470	5142990
90DCP-130	WEBLI	Folson Lk.	13	G	G		401470	5143090
90DCP-141	WEBLI	Folson Lk.	13	G	G		402320	5141420

APPENDIX 1, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	NAME 2	Depth(m)	UTM - East	UTM - North
90DCP-142	WEBLI	Folson Lk.	13	G	G		402320	5141420
90DCP-150	WEBLI	Folson Lk.	13	G	G		401840	5141960
90DCP-151	WEBLI	Folson Lk.	13	G	G		401960	5142070
90DCP-153	WEBLI	Folson Lk.	13	G	G		401670	5142120
90DCP-154	WEBLI	Folson Lk.	13	G	G		401630	5142220
90DCP-156	WEBLI	Folson Lk.	13	G	G		401550	5142300
90DCP-188	WEBLI	Folson Lk.	13	G	G		402160	5141970
90DCP-189	WEBLI	Folson Lk.	13	MS	G		402140	5142080
90DCP-195	WEBLI	Folson Lk.	13	G	G		403790	5140930
90DCP-253	WEBLI	Moon Lk.	13	MG	G		405980	5142670
90DCP-254	WEBLI	Moon Lk.	13	G	G		405960	5142540
90DCP-255	WEBLI	Moon Lk.	13	G	G		405930	5142390
90DCP-258	WEBLI	Moon Lk.	13	G	G		405910	5142180
91DCP-001	WEBLI	DDH#EBL1	13	G	G	4.23		

APPENDIX 1. Whole-rock geochemistry of cumulate rocks from the East Bull Lake Intrusion. Part B. Major element analyses.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	NAME 1	NAME 2	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-300	6b	yG	AG	48.37	0.56	19.03	9.00	0.14	7.52	10.61	2.24	0.34	0.07	2.14	100.02	62.34	0.16
90DCP-304	6b	snLG	AG	47.47	0.39	19.71	9.91	0.14	6.79	9.62	2.26	0.80	0.05	2.53	99.67	57.58	0.15
90DCP-313	6b	snG	AG	49.15	0.45	21.33	7.17	0.13	4.98	11.04	2.85	0.81	0.08	1.96	99.95	57.91	0.32
90DCP-314	6b	snG	AG	48.30	0.45	22.27	7.52	0.12	4.67	11.25	2.45	0.78	0.08	1.99	99.88	55.16	0.22
90DCP-315	6b	snG	AG	48.32	0.38	21.34	7.51	0.14	5.11	10.95	2.54	1.05	0.07	2.32	99.73	57.41	0.32
90DCP-318	6b	snG	AG	48.83	0.43	21.44	7.99	0.12	4.94	11.70	2.43	0.40	0.08	1.24	99.60	55.05	0.43
90DCP-320	6b	snG	AG	48.78	0.42	20.98	7.40	0.11	5.64	10.65	2.50	1.00	0.07	1.93	99.48	60.15	0.48
90DCP-322	6b	G	AG	49.53	0.33	18.99	8.34	0.14	7.07	11.17	2.38	0.50	0.06	1.64	100.15	62.68	0.40
90DCP-327	6b	snG	AG	48.43	0.32	19.20	9.18	0.15	7.30	10.26	2.38	0.55	0.06	2.07	99.90	61.17	0.38
90DCP-330	6b	snG	AG	49.16	0.46	20.10	8.07	0.11	6.01	11.34	2.54	0.32	0.08	1.45	99.64	59.60	0.29
90DCP-331	6b	LG	AG	48.64	0.39	19.87	8.67	0.13	6.75	11.20	2.45	0.40	0.06	1.61	100.17	60.66	0.27
90DCP-332	6b	MG	AG	49.85	0.33	19.12	8.28	0.14	6.93	11.07	2.45	0.37	0.05	1.51	100.10	62.38	0.26
90DCP-333	6b	G	AG	48.57	0.37	19.12	8.57	0.15	7.38	10.92	2.27	0.68	0.06	2.16	100.25	63.04	0.35
90DCP-335	6b	snLG	AG	50.22	0.52	21.14	7.15	0.12	4.48	11.08	2.77	0.50	0.10	1.52	99.60	55.38	0.26
90DCP-336	6b	snLG	AG	47.59	0.52	21.51	8.68	0.13	5.09	11.38	2.44	0.44	0.08	1.63	99.49	53.74	0.16
90DCP-337	6b	snG	AG	48.60	0.46	22.03	7.74	0.12	4.67	11.94	2.45	0.49	0.07	1.24	99.81	54.45	0.24
90DCP-339	6b	snG	AG	49.27	0.48	22.77	7.27	0.11	4.21	11.97	2.57	0.45	0.08	1.09	100.27	53.43	0.16
90DCP-340	6b	snG	AG	48.72	0.40	22.24	7.48	0.12	4.84	11.92	2.52	0.41	0.07	1.25	99.97	56.17	0.23
90DCP-321	6b	G	G	48.70	0.44	17.41	9.72	0.15	8.31	10.57	2.11	0.44	0.06	2.03	99.94	62.87	0.42
90DCP-323	6b	G	G	48.64	0.47	18.53	9.14	0.15	7.66	10.72	2.22	0.51	0.06	1.95	100.05	62.41	0.39
90DCP-324	6b	G	G	49.83	0.36	17.79	8.83	0.14	7.75	10.28	2.30	0.52	0.08	1.91	99.79	63.48	0.43
90DCP-292	7a	nLG	GA	48.78	0.39	24.89	5.49	0.08	2.44	12.56	2.48	0.58	0.07	1.64	99.40	46.82	0.19
90DCP-298	7a	nG	GA	47.34	0.34	25.63	6.02	0.10	3.35	12.00	2.65	0.81	0.06	1.86	100.16	52.43	0.23
90DCP-307	7a	nLG	GA	48.53	0.25	25.10	5.49	0.08	2.33	10.08	3.91	1.21	0.06	2.81	99.85	45.67	0.43
90DCP-309	7a	nLG	GA	47.60	0.31	25.00	4.88	0.09	2.78	11.73	2.60	1.72	0.07	2.92	99.70	53.02	0.50
90DCP-317	7a	snG	GA	47.58	0.58	22.00	8.75	0.13	4.41	9.18	3.76	0.80	0.07	2.59	99.85	49.96	0.54
90DCP-047	7b	A	A	48.29	0.10	28.61	2.33	0.03	2.10	14.33	1.89	0.47	0.01	1.00	99.16	64.05	0.12
91DCP-112	7b	A	A	48.00	0.14	27.76	3.51	0.05	2.54	12.20	2.98	0.95	0.03	2.29	100.44	58.84	
90DCP-236	7b	A	GA	47.20	0.22	28.48	4.25	0.06	1.85	14.17	2.92	0.45	0.05	1.20	100.85	46.30	0.45
90DCP-360	7b	snLG	GA	48.20	0.10	24.09	5.59	0.10	5.33	11.78	2.69	0.42	0.03	1.91	100.24	65.38	0.24
90DCP-361	7b	snLG	GA	47.28	0.09	26.05	4.29	0.09	2.92	13.57	2.58	0.95	0.04	1.95	99.81	57.42	0.19
90DCP-376	7b	G	GA	48.60	0.02	22.00	6.30	0.10	4.30	10.32	3.10	0.84	0.04	2.40	98.02	57.48	0.04
90DCP-400	7b	A	GA	48.37	0.36	26.89	3.61	0.07	1.88	13.89	2.67	0.49	0.06	1.29	99.58	50.78	0.04
90DCP-408	7b	LG	GA	46.52	0.13	25.21	4.76	0.07	5.37	12.85	2.24	0.43	0.04	2.02	99.64	69.09	0.04
91DCP-111	7b	GA	GA	49.21	0.19	24.14	4.55	0.07	3.62	11.66	3.28	0.76	0.03	2.51	100.01	61.14	
91DCP-113	7b	GA	GA	48.59	0.24	25.49	4.78	0.08	3.81	12.95	2.60	0.38	0.03	1.30	100.23	61.22	
91DCP-114	7b	GA	GA	47.15	0.15	27.64	4.43	0.06	3.01	13.27	2.57	0.46	0.02	1.85	100.61	57.35	
91DCP-115	7b	GA	GA	47.91	0.12	27.43	4.14	0.05	2.77	13.49	2.59	0.26	0.02	1.87	100.64	56.99	
91DCP-116	7b	GA	GA	48.54	0.21	24.18	4.69	0.07	4.16	12.82	2.65	0.31	0.04	1.89	99.56	63.73	
91DCP-119	7b	GA	GA	47.77	0.23	25.44	4.56	0.07	3.41	12.54	2.76	0.47	0.05	2.31	99.61	59.69	
91DCP-121	7b	GA	GA	46.94	0.15	26.07	5.61	0.06	2.48	12.70	3.12	0.56	0.03	2.81	100.52	46.68	
91DCP-124	7b	GA	GA	47.00	0.16	27.22	4.25	0.06	1.70	12.69	3.40	0.73	0.02	2.70	99.93	44.17	
91DCP-131	7b	GA	GA	48.69	0.13	23.00	6.63	0.10	4.53	10.64	2.66	1.50	0.03	2.48	100.40	57.48	
91DCP-133	7b	GA	GA	49.06	0.12	25.31	4.28	0.07	2.85	12.56	3.87	0.40	0.02	1.56	100.09	56.91	
91DCP-179A	7b	GA	GA	48.24	0.10	26.54	4.56	0.06	2.71	13.03	2.91	0.37	0.03	1.94	100.47	54.01	
90DCP-044	7b	G	AG	47.62	0.20	21.73	8.01	0.12	5.93	11.15	1.99	0.38	0.02	2.20	99.35	59.44	0.10

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-045	7b	snLG	AG	48.99	0.60	20.72	7.73	0.13	4.98	11.16	2.13	0.88	0.05	1.70	99.05	56.07	0.09
90DCP-046	7b	A	AG	48.58	0.11	25.27	4.10	0.06	4.50	13.75	1.76	0.57		1.30	100.01	68.45	0.06
90DCP-073	7b	LG	AG	49.43	0.26	22.31	6.50	0.10	5.39	11.76	2.02	0.53	0.04	1.40	99.75	62.17	0.04
90DCP-074	7b	G	AG	45.19	0.08	20.83	8.28	0.12	9.53	11.08	1.10	0.24		2.70	99.15	69.52	0.10
90DCP-081	7b	G	AG	49.54	0.46	19.93	8.54	0.15	6.34	11.34	1.69	0.27	0.04	1.90	100.19	59.53	0.04
90DCP-234	7b	LG	AG	45.23	0.12	22.21	8.28	0.12	7.45	11.96	1.58	0.30	0.03	2.50	99.78	64.06	0.28
90DCP-235	7b	A	AG	49.32	0.26	22.40	6.12	0.10	4.77	11.27	2.74	0.99	0.03	1.40	99.40	60.69	0.37
90DCP-238	7b	LG	AG	45.36	0.10	21.45	8.64	0.14	7.89	10.99	1.77	0.46	0.03	3.00	99.83	64.40	0.30
90DCP-240	7b	G	AG	47.75	0.41	19.37	9.14	0.14	6.53	10.98	1.75	0.65	0.05	2.20	98.97	58.60	0.35
90DCP-359	7b	vtLG	AG	49.94	0.19	21.19	6.13	0.11	5.75	11.73	2.71	0.58	0.04	1.55	99.92	65.01	0.19
90DCP-372	7b	LG	AG	45.36	0.19	25.00	7.10	0.07	3.80	12.52	2.99	0.83	0.03	2.20	100.09	51.46	0.04
90DCP-392	7b	LG	AG	47.10	0.22	21.80	6.75	0.10	7.26	11.98	2.07	0.34	0.05	2.40	100.07	68.06	0.06
90DCP-393	7b	LG	AG	46.98	0.19	22.01	6.62	0.10	7.15	11.58	2.35	0.38	0.05	2.61	100.02	68.15	0.01
90DCP-394	7b	LG	AG	46.31	0.47	18.63	9.00	0.13	7.44	10.30	2.46	0.32		2.40	97.46	62.09	0.04
91DCP-117	7b	AG	AG	47.79	0.18	23.52	5.94	0.08	4.57	13.05	2.49	0.24	0.03	2.40	100.28	60.37	
91DCP-120	7b	AG	AG	47.23	0.16	22.84	7.01	0.10	6.00	11.21	2.21	0.38	0.03	2.50	99.68	62.92	
91DCP-123	7b	AG	AG	44.22	0.13	20.24	11.47	0.15	6.78	10.41	2.19	0.21	0.02	4.00	99.80	53.94	
91DCP-125	7b	AG	AG	52.22	1.17	17.00	8.51	0.12	4.94	10.71	2.80	0.23	0.20	2.11	100.01	53.50	
91DCP-126	7b	AG	AG	47.86	0.19	23.29	5.95	0.09	3.95	12.20	3.49	0.32	0.03	1.91	99.26	56.82	
91DCP-132	7b	AG	AG	49.93	0.14	23.21	4.90	0.08	4.05	12.37	2.93	0.45	0.02	1.69	99.77	62.08	
91DCP-134	7b	AG	AG	47.42	0.13	21.41	9.26	0.12	5.98	9.54	2.63	0.40	0.02	3.49	100.39	56.15	
91DCP-135	7b	AG	AG	50.30	0.12	22.10	5.40	0.09	4.65	11.27	2.98	0.40	0.01	2.04	99.36	63.06	
91DCP-137	7b	AG	AG	46.73	0.27	23.02	7.50	0.11	5.81	12.07	2.32	0.46	0.03	2.29	100.59	60.52	
91DCP-139	7b	AG	AG	60.74	0.26	17.66	4.42	0.07	2.95	7.86	4.56	0.35	0.04	1.54	100.46	56.96	
91DCP-140	7b	AG	AG	47.39	0.25	20.37	8.37	0.13	7.23	11.07	2.30	0.27	0.04	2.85	100.27	63.10	
91DCP-141A	7b	AG	AG	50.31	0.28	20.85	7.22	0.11	4.31	10.95	2.71	0.54	0.02	2.45	99.75	54.19	
91DCP-141B	7b	AG	AG	52.25	0.35	20.36	6.59	0.10	4.39	10.40	2.65	0.33	0.03	2.00	99.44	56.86	
91DCP-142	7b	AG	AG	51.97	0.26	18.66	7.53	0.11	4.90	10.50	2.90	0.43	0.02	2.04	99.32	56.29	
91DCP-179C	7b	AG	AG	47.97	0.10	22.85	7.08	0.09	4.35	11.82	2.78	0.31	0.02	1.85	99.21	54.88	
91DCP-179D	7b	AG	AG	48.69	0.13	22.36	6.73	0.09	4.94	11.36	2.92	0.40	0.02	2.37	100.01	59.25	
90DCP-043	7b	G	G	45.51	0.12	17.38	8.47	0.16	10.84	11.85	1.02	0.33	0.02	3.00	98.71	71.71	0.06
90DCP-239	7b	G	G	47.33	0.30	15.71	11.18	0.16	11.08	9.52	1.87	0.32	0.04	2.70	100.21	66.25	0.21
91DCP-110	7b	G	G	50.50	0.44	16.28	8.46	0.14	7.61	10.42	2.12	0.48	0.05	2.81	99.31	64.08	
91DCP-118	7b	G	G	48.70	0.85	15.09	9.27	0.16	9.27	11.48	1.92	0.21	0.07	2.33	99.35	66.45	
91DCP-127	7b	G	G	55.13	0.88	13.10	10.97	0.16	5.44	10.27	1.60	0.27	0.13	2.55	100.49	49.56	
91DCP-128	7b	G	G	48.86	1.96	12.91	16.05	0.23	5.27	10.54	1.35	0.45	0.08	2.50	100.21	39.40	
91DCP-129	7b	G	G	50.48	1.44	13.07	15.97	0.21	5.10	9.30	1.49	1.36	0.14	1.85	100.40	38.75	
91DCP-136	7b	G	G	49.17	0.18	18.25	8.85	0.14	7.56	10.37	2.09	0.56	0.05	2.72	99.93	62.85	
91DCP-138	7b	G	G	46.84	0.53	16.00	12.86	0.19	8.78	9.45	1.62	0.45	0.05	3.76	100.53	57.47	
91DCP-143	7b	G	G	52.09	0.39	16.39	9.46	0.16	7.14	9.24	2.61	0.57	0.05	2.04	100.13	59.91	
91DCP-179B	7b	G	G	47.57	0.22	16.73	11.62	0.14	7.49	10.67	2.17	0.29	0.03	3.51	100.43	56.07	
91DCP-130	7b	MG	MG	49.25	1.73	7.42	20.15	0.28	8.54	8.50	0.60	1.44	0.11	2.44	100.45	45.63	
91DCP-094	8	GA	GA	47.23	0.21	25.79	3.93	0.06	2.88	13.74	2.70	0.91	0.06	2.94	100.46	59.19	
91DCP-095	8	GA	GA	45.50	0.22	24.78	6.22	0.09	3.44	12.14	3.22	0.57	0.04	3.32	99.53	52.29	
91DCP-096	8	GA	GA	45.53	0.11	26.13	3.39	0.06	2.55	12.73	2.71	1.59	0.04	4.55	99.39	59.86	
91DCP-097	8	GA	GA	46.20	0.23	24.31	4.28	0.07	3.13	12.32	3.16	1.31	0.03	4.39	99.44	59.13	
91DCP-104	8	GA	GA	50.84	0.18	24.78	2.69	0.04	1.11	11.21	4.73	0.91	0.06	2.70	99.25	45.05	

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
91DCP-105	8	GA	GA	47.90	0.15	24.04	4.93	0.09	4.38	11.74	2.75	0.81	0.03	2.50	99.30	63.76	
90DCP-038	8	yG	AG	49.64	0.18	23.69	6.56	0.08	4.46	10.66	2.46	0.47	0.03	1.80	100.04	57.39	0.06
90DCP-039	8	G	AG	50.22	0.58	21.11	7.85	0.12	5.09	11.68	1.87	0.38	0.04	1.10	100.04	56.23	0.06
90DCP-010	8	G	AG	50.20	0.23	21.75	6.30	0.10	5.54	12.00	1.90	0.35	0.02	1.00	99.38	63.51	0.03
90DCP-041	8	G	AG	48.75	0.33	21.13	9.16	0.12	5.48	10.04	2.30	0.54	0.04	1.90	99.80	54.24	0.03
90DCP-071	8	G	AG	49.61	0.21	22.27	6.98	0.12	4.74	11.07	2.21	0.84	0.02	1.50	99.55	57.35	0.05
90DCP-072	8	LG	AG	48.43	0.19	21.26	7.36	0.12	6.20	11.76	1.69	0.53	0.01	1.70	99.24	62.51	0.04
90DCP-232	8	G	AG	49.18	0.35	21.39	6.33	0.11	5.69	12.09	2.42	0.43	0.06	1.20	99.25	64.04	0.17
90DCP-265	8	G	AG	49.62	0.26	19.95	6.77	0.12	7.07	12.52	2.10	0.31	0.05	1.19	99.96	67.41	0.16
90DCP-266	8	LG	AG	49.66	0.27	22.03	6.35	0.10	4.92	12.20	2.53	0.54	0.05	1.41	100.06	60.55	0.15
90DCP-269	8	G	AG	49.47	0.29	20.45	7.87	0.14	5.84	11.71	2.13	0.52	0.04	1.44	99.90	59.51	0.12
90DCP-270	8	LG	AG	48.98	0.30	21.57	6.92	0.13	5.28	11.53	2.73	0.50	0.05	1.62	99.61	60.18	0.12
90DCP-398	8	G	AG	49.22	0.35	19.74	7.75	0.11	6.79	10.57	2.45	0.73	0.06	2.01	99.78	63.44	0.20
90DCP-415	8	snLG	AG	50.09	0.51	21.40	6.42	0.10	5.15	11.12	2.78	0.64	0.10	1.38	99.69	61.37	0.04
90DCP-416	8	G	AG	49.51	0.28	20.32	8.22	0.13	6.06	11.44	2.27	0.36	0.06	1.37	100.02	59.36	0.01
90DCP-418	8	G	AG	47.40	0.30	20.16	9.14	0.14	7.12	11.19	2.09	0.42	0.05	1.64	99.65	60.68	0.03
90DCP-424	8	G	AG	48.05	0.40	20.16	8.50	0.14	6.74	10.55	2.57	0.49	0.06	2.10	99.76	61.10	0.10
91DCP-092	8	AG	AG	46.09	0.20	22.03	6.92	0.10	7.14	11.15	2.18	0.45	0.05	4.00	100.30	67.13	
91DCP-093	8	AG	AG	47.06	0.18	23.18	6.13	0.09	6.37	11.83	2.26	0.39	0.05	2.72	100.25	67.29	
91DCP-098	8	AG	AG	48.42	0.20	22.21	5.91	0.10	5.58	12.18	2.60	0.38	0.03	1.95	99.55	65.16	
91DCP-100	8	AG	AG	46.60	0.24	22.51	6.42	0.10	5.58	10.28	3.11	0.97	0.05	3.91	99.76	63.26	
91DCP-101	8	AG	AG	47.33	0.54	18.23	8.34	0.13	7.93	11.04	2.26	0.67	0.06	3.12	99.67	65.34	
91DCP-102	8	AG	AG	47.62	0.16	22.92	6.06	0.10	5.89	11.95	2.57	0.45	0.03	2.48	100.21	65.80	
91DCP-103	8	AG	AG	46.98	0.22	22.60	5.82	0.09	4.40	10.50	4.03	0.64	0.03	3.98	99.29	59.92	
91DCP-109	8	AG	AG	62.69	0.57	13.74	5.59	0.08	2.24	9.30	3.79	0.06	0.10	2.17	100.32	44.19	
90DCP-070	8	G	G	46.57	0.26	12.61	15.68	0.23	15.58	7.36	1.24	0.22	0.03	0.60	100.37	66.31	0.10
90DCP-231	8	G	G	45.88	0.24	15.27	12.26	0.19	11.79	10.11	1.24	0.36	0.03	2.90	100.27	65.58	0.22
90DCP-262	8	G	G	51.04	0.84	15.00	10.94	0.17	6.98	9.74	2.02	0.73	0.10	2.25	99.81	55.83	0.33
90DCP-267	8	LG	G	52.46	1.04	13.97	12.29	0.16	5.36	8.22	2.88	1.54	0.12	1.69	99.73	46.35	0.11
90DCP-268	8	G	G	50.27	0.34	15.89	10.01	0.17	9.01	9.84	2.01	0.38	0.06	2.10	100.08	64.07	0.17
90DCP-397	8	G	G	44.15	0.20	11.92	14.46	0.19	15.14	8.37	0.67	0.61	0.04	4.02	99.77	67.47	0.04
90DCP-399	8	G	G	46.63	0.25	16.73	11.50	0.17	9.81	9.99	1.50	0.48	0.05	2.64	99.75	62.82	0.04
90DCP-417	8	G	G	47.71	0.44	17.95	11.35	0.17	7.56	10.51	1.96	0.55	0.07	1.55	99.82	56.89	0.01
91DCP-099	8	G	G	44.29	0.12	18.09	10.48	0.17	10.03	9.31	1.76	0.66	0.02	4.64	99.57	65.46	
91DCP-106	8	G	G	48.29	0.51	17.61	8.01	0.14	7.51	11.57	2.44	0.62	0.06	3.58	100.44	65.02	
91DCP-107	8	G	G	61.79	0.48	8.89	10.41	0.17	6.69	7.74	1.37	0.10	0.07	2.49	100.20	56.01	
91DCP-108	8	G	G	64.27	0.55	10.78	8.57	0.12	4.35	7.09	2.03	0.12	0.10	2.22	100.20	50.12	
90DCP-053	9	G	GA	49.47	0.45	24.72	4.82	0.07	3.62	11.97	2.51	0.58	0.07	1.30	99.58	59.80	0.04
90DCP-054	9	G	GA	49.40	0.46	24.73	4.82	0.07	3.59	11.94	2.72	0.57	0.06	1.60	99.97	59.59	0.10
90DCP-413	9	G	GA	49.18	0.68	23.68	5.06	0.08	3.87	11.88	3.07	0.52	0.09	1.47	99.58	60.24	0.06
90DCP-419	9	snLG	GA	49.67	0.40	23.17	5.56	0.09	3.51	10.91	3.35	1.02	0.10	2.22	100.00	55.57	0.15
90DCP-422	9	LG	GA	48.86	0.30	24.22	4.80	0.08	4.27	11.61	3.11	0.62	0.06	1.65	99.58	63.80	0.11
91DCP-079A	9	GA	GA	46.53	0.17	25.18	5.82	0.08	5.28	11.50	2.58	0.45	0.04	2.96	100.58	64.26	
91DCP-079B	9	GA	GA	46.99	0.20	26.81	3.53	0.05	2.60	12.10	2.69	1.59	0.04	2.88	99.48	59.37	
91DCP-080	9	GA	GA	46.83	0.12	25.31	4.48	0.06	4.35	12.01	2.92	0.53	0.03	2.75	99.39	65.76	
91DCP-082	9	GA	GA	46.62	0.14	25.73	4.53	0.06	1.77	13.81	3.51	0.61	0.03	2.92	99.73	43.63	
90DCP-035	9	G	AG	51.73	0.76	17.19	10.28	0.17	5.77	8.51	2.21	1.23	0.07	2.00	99.91	52.66	0.16

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-042	9	G	AG	48.80	0.59	22.01	8.00	0.13	3.90	11.85	2.17	0.43	0.07	1.00	98.95	49.13	0.03
90DCP-052	9	yMG	AG	49.40	0.40	22.93	5.94	0.09	4.30	11.98	2.25	0.59	0.06	1.90	99.83	58.92	0.16
90DCP-056	9	G	AG	48.97	0.27	21.09	7.38	0.11	6.42	11.09	2.00	0.46	0.02	2.00	99.81	63.30	0.03
90DCP-057	9	G	AG	48.82	0.31	21.11	6.52	0.10	6.68	10.78	2.23	0.70	0.02	2.10	99.37	66.98	0.07
90DCP-230	9	G	AG	48.96	0.51	18.97	9.15	0.14	7.63	10.64	2.24	0.30	0.11	1.70	100.35	62.29	0.17
90DCP-242	9	G	AG	47.38	0.31	19.01	10.18	0.15	8.88	9.10	2.29	0.63	0.05	2.90	100.88	63.34	0.26
90DCP-387	9	LG	AG	50.09	0.27	21.81	6.12	0.10	5.30	10.97	2.67	0.70	0.06	1.70	99.79	63.17	0.25
90DCP-388	9	G	AG	48.61	0.43	18.77	7.80	0.13	8.45	10.39	2.35	0.58	0.05	2.44	100.00	68.21	0.27
90DCP-389	9	G	AG	48.73	0.38	20.03	7.69	0.11	7.45	10.77	2.48	0.38	0.07	1.85	99.94	65.74	0.04
90DCP-390	9	LG	AG	49.56	0.39	21.17	6.42	0.11	5.69	10.68	2.86	0.62	0.07	2.07	99.74	63.71	0.22
90DCP-391	9	LG	AG	48.00	0.40	23.92	5.30	0.08	5.00	12.56	2.33	0.44	0.06	1.58	99.67	65.14	0.07
90DCP-409	9	CG	AG	47.64	0.21	20.48	7.30	0.11	7.47	11.26	2.09	0.28	0.04	2.78	99.66	66.96	0.53
90DCP-411	9	CG	AG	47.49	0.29	20.56	7.98	0.12	7.56	11.16	2.03	0.43	0.06	2.22	99.90	65.24	0.04
90DCP-412	9	LG	AG	47.08	0.30	21.24	8.41	0.12	7.07	11.11	2.31	0.30	0.06	2.08	100.08	62.48	0.02
90DCP-414	9	LG	AG	49.07	0.48	20.77	7.64	0.11	6.02	11.42	2.35	0.47	0.09	1.46	99.88	60.95	0.04
90DCP-420	9	LG	AG	49.63	0.38	21.41	5.82	0.10	4.71	11.03	2.99	1.37	0.06	2.68	100.18	61.58	0.21
90DCP-421	9	G	AG	48.65	0.36	22.83	6.16	0.09	5.08	11.78	2.65	0.33	0.06	1.58	99.57	62.03	0.11
90DCP-425	9	LG	AG	48.23	0.55	21.65	7.49	0.13	4.96	11.31	2.39	0.67	0.07	2.14	99.59	56.74	0.23
90DCP-426	9	LG	AG	48.52	0.35	19.39	8.58	0.14	7.31	10.91	2.14	0.36	0.06	2.05	99.81	62.79	0.17
90DCP-427	9	G	AG	48.69	0.40	22.44	6.93	0.10	4.90	11.88	2.41	0.37	0.06	1.51	99.69	58.34	0.10
90DCP-428	9	G	AG	49.22	0.45	21.67	7.18	0.11	5.27	11.34	2.50	0.46	0.09	1.90	100.19	59.25	0.17
91DCP-047	9	AG	AG	48.65	0.25	20.05	8.97	0.14	6.07	8.28	3.25	1.27	0.06	3.23	100.21	57.26	
91DCP-048	9	AG	AG	48.33	0.26	20.71	8.25	0.12	6.42	9.42	2.97	1.07	0.05	2.75	100.36	60.65	
91DCP-049	9	AG	AG	48.96	0.24	21.61	6.22	0.10	5.17	11.04	3.23	0.56	0.05	2.17	99.34	62.20	
91DCP-050	9	AG	AG	47.80	0.28	19.83	8.58	0.12	6.57	10.84	2.35	0.32	0.04	2.52	99.25	60.29	
91DCP-052	9	AG	AG	47.16	0.76	20.94	8.03	0.11	5.91	11.16	2.57	0.43	0.08	2.37	99.50	59.29	
91DCP-053	9	AG	AG	49.56	0.50	22.05	6.81	0.09	4.36	11.42	3.14	0.49	0.07	1.85	100.33	55.93	
91DCP-054	9	AG	AG	49.31	0.19	20.40	7.59	0.10	5.75	10.97	2.86	0.31	0.03	1.96	99.48	60.02	
91DCP-055	9	AG	AG	48.74	0.36	21.31	7.30	0.11	5.93	11.41	2.91	0.20	0.08	1.98	100.33	61.65	
91DCP-068	9	AG	AG	49.63	0.40	19.49	8.53	0.13	5.79	10.89	2.70	0.61	0.05	2.24	100.45	57.35	
91DCP-070	9	AG	AG	50.55	0.66	21.07	7.29	0.10	4.15	10.92	3.07	0.56	0.13	1.89	100.38	52.99	
91DCP-071	9	AG	AG	48.53	0.38	18.57	10.04	0.14	6.90	10.35	2.36	0.40	0.05	2.55	100.28	57.67	
91DCP-072	9	AG	AG	49.76	0.53	21.12	7.07	0.10	4.62	11.42	2.75	0.38	0.08	1.67	99.49	56.39	
91DCP-075	9	AG	AG	49.02	0.38	19.44	8.33	0.11	5.10	10.97	2.96	0.54	0.07	2.57	99.50	54.79	
91DCP-076	9	AG	AG	49.26	0.63	20.99	6.54	0.09	4.12	11.53	3.04	0.90	0.12	2.15	99.37	55.51	
91DCP-078	9	AG	AG	49.47	0.53	20.46	7.23	0.10	4.17	11.23	2.83	1.04	0.17	2.22	99.46	53.34	
91DCP-081	9	AG	AG	45.31	0.14	23.59	4.43	0.06	3.11	16.76	2.39	0.40	0.03	3.03	99.25	58.19	
91DCP-083	9	AG	AG	47.73	0.49	21.67	6.47	0.09	4.44	11.16	3.19	1.08	0.05	3.14	99.49	57.62	
91DCP-084	9	AG	AG	48.72	0.24	22.36	6.43	0.08	4.70	11.96	2.84	0.48	0.04	2.00	99.85	59.16	
91DCP-085	9	AG	AG	48.65	0.35	21.63	7.01	0.10	4.97	11.40	3.02	0.43	0.04	1.82	99.43	58.44	
91DCP-086	9	AG	AG	48.96	0.34	19.54	7.81	0.13	6.68	10.50	3.17	0.34	0.07	2.24	99.76	62.89	
91DCP-087	9	AG	AG	44.38	0.13	22.09	7.41	0.10	8.93	10.09	1.81	0.85	0.02	4.59	100.39	70.47	
91DCP-088	9	AG	AG	45.39	0.15	21.45	6.89	0.10	7.94	10.62	2.03	0.93	0.03	3.79	99.31	69.52	
91DCP-089	9	AG	AG	45.79	0.18	23.97	5.99	0.09	6.02	10.99	2.64	1.02	0.05	3.79	100.53	66.56	
91DCP-090	9	AG	AG	46.21	0.29	22.43	6.40	0.09	6.40	11.77	2.41	0.41	0.06	3.08	99.54	66.44	
91DCP-091	9	AG	AG	46.64	0.14	24.15	5.60	0.07	5.96	12.40	2.34	0.16	0.03	2.69	100.17	67.82	
90DCP-036	9	LG	G	51.53	0.75	16.50	10.84	0.17	6.19	8.51	2.02	1.13	0.08	2.10	99.83	53.09	0.14

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-037	9	G	G	52.91	0.84	15.50	11.58	0.17	5.82	8.01	2.18	1.08	0.08	1.80	99.96	49.88	0.37
90DCP-102	9	OG	G	47.75	0.26	20.21	9.29	0.13	9.12	10.40	1.64	0.25	0.04	0.90	99.98	66.06	0.02
90DCP-198	9	G	G	50.20	1.10	14.50	13.50	0.20	6.68	8.52	3.31	0.36	0.06	1.40	99.83	49.50	0.19
90DCP-199	9	G	G	52.10	0.69	15.40	11.90	0.19	4.81	10.20	2.45	0.50	0.13	1.00	99.37	44.46	0.22
90DCP-200	9	OG	G	49.60	0.46	17.30	13.50	0.18	5.39	9.00	2.44	0.70	0.09	1.40	100.06	44.16	0.16
90DCP-201	9	G	G	51.00	0.97	13.70	15.80	0.25	4.93	9.81	2.2	0.57	0.08	0.40	99.71	38.20	0.20
90DCP-202	9	G	G	48.10	1.56	13.50	18.00	0.21	5.59	9.89	2.29	0.45	0.07	0.60	100.26	38.09	0.14
90DCP-229	9	G	G	45.53	0.24	15.08	11.68	0.16	14.37	8.75	1.08	0.43	0.04	3.80	101.16	70.91	0.44
90DCP-410	9	OG	G	46.57	0.27	19.60	8.68	0.13	8.87	11.13	1.89	0.22	0.05	2.31	99.72	66.93	0.04
91DCP-051	9	G	G	48.58	0.18	18.56	8.94	0.12	7.43	10.92	2.16	0.30	0.04	2.23	99.48	62.22	
91DCP-067	9	G	G	47.02	0.34	17.89	11.43	0.17	8.02	9.60	2.18	0.51	0.05	3.29	100.49	58.16	
91DCP-069	9	G	G	46.75	0.35	16.23	12.43	0.18	9.38	9.09	1.96	0.45	0.05	3.70	100.56	59.92	
91DCP-073	9	G	G	47.32	0.62	17.52	10.34	0.14	7.72	10.38	2.32	0.27	0.05	2.83	99.51	59.64	
91DCP-074	9	G	G	45.26	0.25	13.61	14.57	0.21	11.81	8.69	1.37	0.39	0.05	4.16	100.36	61.61	
91DCP-077	9	G	G	48.16	0.34	16.96	10.66	0.15	7.62	10.15	2.18	0.20	0.06	2.83	99.31	58.61	
91DCP-032	10	AG	AG	45.09	0.48	17.44	10.35	0.18	9.44	8.39	2.51	0.66	0.08	4.68	99.31	64.38	
91DCP-033	10	AG	AG	49.23	0.47	19.10	8.15	0.13	6.78	11.88	2.70	0.37	0.05	1.38	100.26	62.24	
91DCP-037	10	AG	AG	47.44	0.27	19.70	8.60	0.12	8.57	10.58	2.52	0.37	0.03	1.29	99.49	66.37	
91DCP-166	10	OAG	AG	47.20	0.42	20.41	8.26	0.11	7.16	10.62	2.45	0.38	0.07	2.44	99.53	63.21	
91DCP-167	10	OAG	AG	48.70	0.39	20.05	8.03	0.12	7.22	10.51	2.38	0.50	0.07	2.15	100.11	64.02	
90DCP-065	10	OG	G	47.09	0.39	18.34	9.58	0.17	8.62	10.33	1.65	0.25	0.06	2.30	98.79	64.07	0.04
90DCP-066	10	OG	G	45.96	0.31	16.59	12.10	0.17	12.11	8.88	1.52	0.38	0.03	1.70	99.75	66.47	0.13
91DCP-035	10	OG	G	43.72	0.29	12.05	15.83	0.21	16.54	6.80	1.42	0.23	0.04	2.62	99.74	67.42	
91DCP-036	10	OG	G	44.46	0.26	13.08	14.37	0.20	15.72	6.84	1.33	0.21	0.05	3.96	100.47	68.42	
91DCP-038	10	OG	G	43.29	0.18	10.67	15.67	0.21	19.09	6.45	1.03	0.17	0.02	3.29	100.07	70.70	
91DCP-039	10	G	G	47.50	0.29	15.98	11.22	0.15	13.15	8.20	1.84	0.25	0.03	1.90	100.52	69.89	
91DCP-040	10	OG	G	45.33	0.22	15.51	12.28	0.16	12.80	8.16	1.68	0.21	0.04	3.11	99.49	67.38	
91DCP-041	10	OG	G	46.06	0.28	15.03	12.45	0.17	13.89	8.49	1.97	0.27	0.04	2.15	100.80	68.85	
91DCP-162	10	OG	G	45.59	0.32	12.00	15.65	0.19	15.23	7.38	0.99	0.22	0.06	2.97	100.60	65.84	
91DCP-163	10	OG	G	44.86	0.27	13.96	12.61	0.17	15.26	6.99	1.36	0.23	0.05	3.69	99.44	70.56	
91DCP-164	10	G	G	45.22	0.30	14.69	12.65	0.15	14.70	6.75	1.54	0.23	0.05	3.21	99.48	69.71	
91DCP-165	10	OG	G	45.42	0.23	12.95	13.31	0.19	16.51	6.60	1.42	0.19	0.03	3.34	100.19	71.07	
91DCP-168	10	OG	G	46.04	0.28	12.37	14.54	0.19	15.53	6.92	1.28	0.19	0.04	2.99	100.36	67.91	
91DCP-169	10	OG	G	44.64	0.29	13.95	13.06	0.17	14.86	7.26	1.38	0.28	0.06	4.64	100.59	69.27	
91DCP-170	10	OG	G	47.16	0.23	16.64	10.63	0.15	12.69	9.17	1.74	0.30	0.03	1.91	100.64	70.26	
91DCP-029	10	MOG	MG	42.59	0.18	8.00	18.51	0.25	18.75	6.42	0.34	0.09	0.02	4.66	99.81	66.74	
91DCP-030	10	MOG	MG	42.97	0.32	8.05	15.44	0.21	19.00	7.24	0.30	0.11	0.03	5.98	99.64	70.91	
91DCP-031	10	MOG	MG	43.03	0.27	9.07	15.68	0.18	20.15	5.59	0.43	0.12	0.04	5.82	100.37	71.79	
91DCP-034	10	MOG	MG	41.98	0.18	9.59	17.39	0.22	19.19	5.62	1.04	0.19	0.04	4.39	99.83	68.60	
91DCP-161	10	MOG	MG	45.49	0.22	9.25	17.32	0.23	17.87	6.28	0.86	0.14	0.02	2.75	100.45	67.15	
90DCP-067	11a	G	GA	50.30	0.64	21.59	6.35	0.11	2.96	9.53	3.48	1.88	0.12	1.80	98.77	48.04	0.05
90DCP-058	11a	G	AG	46.85	0.29	19.73	8.59	0.12	8.64	9.60	1.92	0.42	0.04	2.40	98.60	66.56	0.16
90DCP-059	11a	G	AG	50.32	0.49	20.76	7.20	0.10	4.02	11.25	2.84	0.59	0.07	0.80	98.44	52.55	0.05
90DCP-061	11a	LG	AG	51.84	0.64	21.66	7.09	0.10	3.59	10.74	2.73	1.05	0.10	0.50	100.04	50.07	0.02
90DCP-062	11a	G	AG	51.19	0.43	18.72	9.35	0.14	5.43	10.79	2.33	0.61	0.06	1.00	100.07	53.50	0.02
90DCP-068	11a	G	AG	51.17	0.35	18.29	9.08	0.13	5.43	9.34	2.40	1.40	0.10	1.90	99.59	54.20	0.08
90DCP-069	11a	G	AG	51.49	0.66	18.87	9.11	0.13	4.86	10.58	2.56	0.79	0.07	0.70	99.82	51.38	0.05

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-082	11a	G	AG	50.75	0.56	17.96	9.43	0.16	5.74	10.81	2.28	0.55	0.07	1.70	100.00	54.64	0.07
91DCP-021	11a	AG	AG	49.94	0.76	17.98	10.33	0.14	4.73	9.81	2.51	1.86	0.11	2.14	100.32	47.55	
91DCP-022	11a	AG	AG	50.54	0.71	18.27	10.56	0.15	4.54	10.38	2.58	0.92	0.11	1.76	100.51	45.99	
91DCP-025	11a	AG	AG	50.27	0.25	21.19	8.39	0.12	4.01	10.05	3.69	0.52	0.05	2.07	100.59	48.64	
91DCP-026	11a	AG	AG	49.12	0.35	21.42	7.09	0.11	4.54	10.29	2.78	1.38	0.04	2.33	99.44	55.93	
91DCP-027	11a	AG	AG	49.63	0.36	20.34	8.23	0.13	5.47	11.21	2.67	0.56	0.08	1.82	100.48	56.82	
90DCP-060	11a	MG	G	50.16	0.45	17.07	9.61	0.17	7.55	11.09	1.93	0.45	0.04	1.20	99.71	60.90	0.04
90DCP-083	11a	G	G	51.22	0.57	14.75	10.98	0.19	7.29	11.36	1.69	0.39	0.07	1.00	99.52	56.79	0.02
90DCP-084	11a	G	G	51.05	0.43	17.67	9.52	0.15	5.89	10.99	2.06	0.58	0.03	1.00	99.37	55.05	0.06
90DCP-085	11a	G	G	51.07	0.54	15.34	10.56	0.18	6.80	11.35	1.62	0.54	0.06	1.10	99.16	56.04	0.03
90DCP-086	11a	G	G	51.29	0.54	17.09	10.24	0.18	5.66	10.16	2.39	0.46	0.06	1.30	99.37	52.28	0.03
90DCP-089	11a	G	G	52.02	0.70	14.10	12.02	0.21	6.79	9.89	1.94	0.34	0.11	1.20	99.32	52.82	0.06
90DCP-090	11a	G	G	51.36	0.62	16.16	11.25	0.18	5.96	10.60	2.16	0.44	0.08	1.20	100.01	51.21	0.01
91DCP-019	11a	G	G	50.65	0.76	12.01	13.13	0.21	9.08	10.32	1.96	0.47	0.10	1.73	100.42	57.80	
91DCP-020	11a	G	G	48.03	0.45	15.11	13.15	0.19	7.92	9.93	1.93	0.45	0.06	2.61	99.83	54.41	
91DCP-024	11a	G	G	44.80	0.31	14.04	15.01	0.23	12.58	7.94	1.26	0.40	0.04	4.09	100.69	62.41	
91DCP-028	11a	G	G	49.38	0.45	16.28	9.39	0.17	7.41	11.73	2.21	0.85	0.06	2.52	100.46	60.96	
90DCP-111	11b	A	A	47.39	0.04	26.43	3.60	0.08	1.88	11.54	2.78	1.99	0.01	3.00	98.75	50.92	0.03
90DCP-170	11b	LG	GA	47.80	0.40	26.50	3.86	0.05	2.22	12.50	2.43	1.14	0.06	2.40	99.36	53.25	0.26
90DCP-206	11b	pLG	GA	53.20	1.01	20.70	8.39	0.11	1.99	9.75	3.24	0.72	0.13	1.10	100.34	31.96	0.12
90DCP-110	11b	LG	AG	48.68	0.14	19.20	6.77	0.12	7.41	11.12	1.78	0.98	0.02	2.60	98.83	68.41	0.15
90DCP-112	11b	G	AG	49.68	0.35	17.71	9.22	0.15	7.28	7.70	3.69	0.55	0.04	3.00	99.38	60.99	0.25
90DCP-162	11b	MG	AG	53.50	1.17	13.60	15.20	0.24	3.95	5.16	4.04	1.98	0.16	0.70	99.70	33.98	0.37
90DCP-163	11b	G	AG	54.00	1.21	13.00	13.70	0.19	3.39	6.38	4.31	1.70	0.21	2.20	100.29	32.89	0.91
90DCP-165	11b	G	AG	49.90	1.01	18.40	11.40	0.15	3.30	9.33	2.91	1.10	0.08	1.90	99.48	36.44	0.21
90DCP-171	11b	LG	AG	52.00	0.48	18.90	8.75	0.13	5.21	9.64	2.31	0.69	0.09	1.80	100.00	54.12	0.21
90DCP-178	11b	G	AG	51.70	0.35	20.10	8.13	0.12	4.20	11.10	2.44	0.43	0.08	0.40	99.11	50.93	0.44
90DCP-191	11b	LG	AG	50.30	0.56	18.80	11.40	0.17	3.43	9.81	2.72	1.40	0.10	1.20	99.89	37.34	0.22
90DCP-192	11b	LG	AG	51.50	0.53	20.70	8.41	0.14	2.79	9.97	2.54	1.46	0.15	1.60	99.79	39.66	0.25
90DCP-203	11b	pLG	AG	51.70	0.40	19.30	9.77	0.15	4.03	10.20	2.7	0.71	0.08	1.00	100.04	44.97	0.14
90DCP-204	11b	G	AG	51.80	0.35	20.70	8.86	0.12	2.25	10.00	3.44	0.55	0.08	1.30	99.45	33.47	0.11
90DCP-205	11b	G	AG	50.90	0.77	18.20	11.40	0.17	3.63	9.63	2.89	0.71	0.10	1.60	100.00	38.68	0.10
90DCP-207	11b	G	AG	50.70	1.01	20.00	10.00	0.15	2.45	10.80	2.83	0.82	0.10	0.80	99.66	32.67	0.10
90DCP-221	11b	LG	AG	50.37	0.30	18.75	8.05	0.15	6.54	9.31	2.61	1.65	0.04	2.90	100.67	61.68	0.21
90DCP-226	11b	G	AG	48.82	1.55	17.70	15.13	0.20	2.54	8.74	2.76	1.32	0.11	1.50	100.37	24.96	0.09
90DCP-113	11b	G	G	51.37	0.74	14.56	11.01	0.17	6.24	9.16	2.81	0.77	0.10	2.20	99.12	52.88	0.11
90DCP-115	11b	G	G	52.14	0.64	14.80	10.49	0.19	6.44	9.99	2.14	0.90	0.09	1.50	99.31	54.89	0.05
90DCP-116	11b	snG	G	50.53	0.72	14.68	12.76	0.21	5.22	9.84	2.08	1.15	0.09	1.50	98.79	44.74	0.05
90DCP-132	11b	G	G	51.54	0.56	15.13	10.88	0.19	5.98	8.06	2.06	2.55	0.08	2.40	99.43	52.13	0.20
90DCP-134	11b	G	G	51.19	1.10	13.80	13.91	0.21	5.47	8.91	2.06	1.18	0.08	2.20	100.10	43.77	0.08
90DCP-135	11b	G	G	50.26	0.91	13.99	13.93	0.21	5.97	9.04	2.81	0.29	0.08	1.70	99.18	45.90	0.16
90DCP-166	11b	LG	G	50.30	0.13	18.80	7.16	0.14	7.51	11.00	2.06	0.62	0.00	2.30	100.02	67.51	0.16
90DCP-169	11b	LG	G	56.60	0.93	13.80	9.29	0.15	6.21	7.80	1.9	0.78	0.07	1.80	99.33	56.97	0.18
90DCP-173	11b	MG	G	52.10	0.62	15.30	11.80	0.19	6.54	10.30	1.9	0.49	0.09	0.60	99.93	52.33	0.10
90DCP-175	11b	G	G	51.50	0.51	16.60	11.00	0.20	6.45	8.45	2.24	1.37	0.06	1.80	100.18	53.74	0.23
90DCP-177	11b	G	G	51.70	0.35	16.50	9.84	0.17	6.02	10.80	1.85	0.59	0.08	1.00	98.90	54.79	0.22
90DCP-193	11b	LG	G	49.10	1.32	16.30	14.30	0.19	4.15	9.81	2.24	0.97	0.07	1.20	99.65	36.50	0.14

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-260	12	G	AG	49.35	0.39	18.36	10.56	0.15	5.47	10.58	2.45	0.39	0.07	1.86	99.63	50.64	0.24
91DCP-009	12	AG	AG	51.02	0.71	20.16	8.12	0.12	4.26	11.23	2.91	0.59	0.10	1.32	100.53	50.93	
91DCP-011	12	AG	AG	50.66	0.53	19.29	8.70	0.12	4.43	10.79	2.63	0.51	0.09	1.57	99.32	50.25	
91DCP-012	12	AG	AG	50.74	0.26	19.28	8.50	0.12	5.44	10.59	2.84	0.48	0.06	2.24	100.55	55.93	
91DCP-013	12	AG	AG	50.04	0.33	18.68	8.61	0.12	5.50	11.22	2.86	0.40	0.07	1.64	99.46	55.86	
90DCP-087	12	DG	G	50.89	0.78	14.39	11.67	0.20	6.94	10.94	1.77	0.71	0.05	0.90	99.24	54.07	0.12
90DCP-088	12	DG	G	50.78	0.66	13.76	11.15	0.19	7.28	11.12	1.73	0.80	0.08	1.00	98.56	56.39	0.15
90DCP-104	12	DG	G	50.87	0.42	14.26	12.10	0.19	7.37	8.36	3.45	0.62	0.07	2.00	99.71	54.69	0.04
90DCP-114	12	DG	G	51.52	0.92	14.29	13.39	0.20	4.71	8.55	2.11	1.20	0.12	1.50	98.50	41.09	0.09
90DCP-117	12	DG	G	51.83	1.00	13.72	12.84	0.19	5.81	8.45	2.75	1.21	0.11	1.10	99.02	47.29	0.16
90DCP-133	12	DG	G	51.19	0.65	14.10	12.03	0.21	6.61	8.79	2.05	1.21	0.06	2.40	99.30	52.13	0.06
90DCP-160	12	pG	G	52.20	1.02	14.20	13.60	0.21	4.49	7.52	3.56	1.45	0.11	1.10	99.46	39.54	0.16
90DCP-161	12	DG	G	52.60	1.10	14.60	11.30	0.18	5.06	8.30	2.81	2.36	0.13	1.20	99.64	47.01	0.22
90DCP-172	12	MG	G	52.20	0.41	15.60	10.40	0.17	7.15	10.40	2.03	0.49	0.08	1.10	100.03	57.66	0.21
90DCP-174	12	DG	G	53.30	0.52	14.50	10.30	0.16	6.59	10.60	2.07	0.46	0.11	0.70	99.31	55.90	0.26
90DCP-176	12	DG	G	51.80	0.58	13.60	10.80	0.18	7.75	11.40	1.64	0.60	0.07	1.10	99.52	58.70	0.16
90DCP-197	12	DG	G	51.80	0.77	14.70	12.40	0.18	6.06	9.19	1.83	0.96	0.12	1.80	99.81	49.19	0.21
90DCP-250	12	G	G	50.46	0.36	17.35	10.11	0.17	6.63	11.22	2.26	0.64	0.05	1.50	100.75	56.50	0.10
90DCP-251	12	G	G	51.34	0.41	15.89	10.72	0.18	7.12	11.11	1.82	0.36	0.08	1.60	100.63	56.82	0.08
90DCP-252	12	pG	G	50.40	0.49	14.23	10.83	0.19	8.32	10.92	1.70	0.75	0.05	1.80	99.68	60.35	0.05
91DCP-005	12	G	G	50.45	0.42	15.39	9.87	0.17	7.01	11.08	2.43	0.59	0.08	2.85	100.33	58.44	
91DCP-006	12	G	G	50.16	0.41	16.69	10.12	0.16	6.68	10.70	2.17	0.49	0.07	2.37	99.99	56.65	
91DCP-007	12	G	G	50.43	0.65	14.11	11.99	0.20	7.42	10.65	2.29	0.51	0.06	1.67	99.96	55.06	
91DCP-008	12	G	G	50.48	0.52	13.84	11.16	0.18	8.01	10.68	2.22	0.49	0.08	1.91	99.55	58.70	
91DCP-010	12	G	G	51.01	0.54	17.11	10.22	0.16	6.10	10.73	2.39	0.58	0.08	1.51	100.43	54.18	
91DCP-015	12	G	G	49.53	0.71	15.34	12.00	0.17	6.57	11.22	2.36	0.40	0.08	2.04	100.41	52.05	
91DCP-016	12	G	G	50.72	0.39	16.78	9.71	0.15	6.32	11.20	2.59	0.43	0.07	1.30	99.63	56.31	
91DCP-017	12	G	G	48.33	2.27	13.77	17.21	0.23	5.39	9.25	2.03	0.49	0.14	1.30	100.41	38.27	
91DCP-018	12	MG	MG	45.45	0.20	6.29	17.47	0.29	17.07	8.14	0.23	0.04	0.03	4.61	99.80	65.92	
90DCP-123	13	G	AG	49.31	0.42	16.20	8.09	0.40	7.27	8.35	2.40	2.40	0.06	0.90	95.79	64.02	0.09
90DCP-124	13	G	AG	53.64	1.30	13.04	15.22	0.32	3.86	5.45	4.53	1.50	0.18	1.30	100.35	33.41	0.09
90DCP-127	13	G	AG	52.42	0.97	15.19	13.55	0.26	3.98	4.62	4.05	2.40	0.14	1.60	99.17	36.82	0.33
90DCP-157	13	G	AG	52.10	1.13	14.10	14.00	0.23	4.33	7.15	4.34	1.08	0.14	1.20	99.80	37.99	0.51
91DCP-002	13	AG	AG	50.16	0.57	19.72	8.85	0.13	4.63	8.10	3.96	0.79	0.08	3.18	100.18	50.90	
90DCP-003	13	AG	AG	50.71	0.48	19.48	9.17	0.14	5.04	8.93	2.78	0.57	0.11	2.87	100.26	52.11	
90DCP-091	13	G	G	50.55	0.58	15.57	10.80	0.19	6.31	10.79	1.84	0.45	0.07	1.60	98.74	53.64	0.02
90DCP-093	13	G	G	50.90	0.58	16.18	10.63	0.18	5.79	10.13	2.05	0.30	0.08	1.70	98.51	51.87	0.01
90DCP-094	13	G	G	51.10	0.60	16.96	10.06	0.16	5.64	10.48	2.17	0.45	0.08	1.40	99.11	52.61	0.01
90DCP-095	13	G	G	50.47	0.51	14.70	11.41	0.20	6.86	11.22	1.79	0.57	0.05	1.50	99.29	54.36	0.01
90DCP-096	13	G	G	51.29	0.72	16.57	9.97	0.16	5.36	10.48	2.27	0.58	0.10	1.00	98.50	51.55	0.03
90DCP-121	13	G	G	51.28	1.18	13.85	14.41	0.24	4.34	7.57	3.58	1.57	0.15	1.40	99.57	37.37	0.61
90DCP-122	13	G	G	55.54	1.30	14.38	13.00	0.31	5.59	1.09	3.15	1.37	0.19	0.60	96.51	45.99	0.49
90DCP-126	13	G	G	54.75	1.30	14.00	16.84	0.31	3.64	1.56	3.48	2.11	0.20	1.50	99.69	29.99	0.03
90DCP-128	13	DG	G	50.40	1.40	13.44	15.84	0.21	4.42	8.89	2.18	0.97	0.10	1.70	99.55	35.61	0.05
90DCP-129	13	G	G	51.55	1.13	13.68	14.66	0.22	4.39	8.04	2.89	1.10	0.16	1.60	99.43	37.26	0.09
90DCP-130	13	G	G	51.45	0.63	14.65	11.77	0.19	6.15	9.20	2.56	0.98	0.08	1.90	99.56	50.86	0.03
90DCP-141	13	G	G	50.28	0.76	14.11	12.13	0.22	6.59	9.97	1.62	0.51	0.07	2.50	98.76	51.82	0.40

APPENDIX 1, Part B (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	SIO2	TIO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-142	13	G	G	50.38	0.76	14.14	12.21	0.23	6.54	10.04	1.64	0.52	0.08	3.10	99.64	51.47	0.45
90DCP-150	13	G	G	53.68	1.14	13.22	15.00	0.37	4.49	4.72	4.06	0.99	0.18	1.20	99.05	37.24	0.17
90DCP-151	13	G	G	48.16	0.80	13.42	14.70	0.19	3.87	11.17	3.50	0.46	0.11	2.60	98.97	34.25	1.97
90DCP-153	13	G	G	52.02	1.21	14.87	15.81	0.24	5.08	1.63	3.10	2.06	0.11	3.20	99.34	38.90	0.69
90DCP-154	13	G	G	57.79	0.80	14.49	13.36	0.19	4.46	0.61	3.36	2.28	0.12	2.50	99.98	39.80	0.04
90DCP-156	13	G	G	50.90	1.03	13.76	13.99	0.20	5.60	7.73	2.02	2.44	0.09	1.70	99.48	44.22	0.08
90DCP-188	13	G	G	51.80	1.27	14.50	19.40	0.18	4.57	1.18	2.82	1.04	0.21	3.20	100.17	31.82	0.12
90DCP-189	13	MS	G	53.20	1.44	14.80	17.90	0.13	3.60	0.98	3.53	2.69	0.21	2.10	100.58	28.49	0.14
90DCP-195	13	G	G	50.20	1.16	14.60	12.80	0.17	5.56	9.76	2.22	0.50	0.15	2.00	99.12	46.25	0.15
90DCP-253	13	MG	G	51.48	0.69	12.20	12.55	0.21	8.19	11.39	1.82	0.45	0.10	0.90	99.98	56.38	0.15
90DCP-254	13	G	G	51.46	0.66	18.18	10.85	0.17	5.85	10.65	2.25	0.66	0.09	0.10	100.92	51.64	0.08
90DCP-255	13	G	G	51.77	0.59	14.98	11.62	0.20	6.96	10.77	2.14	0.62	0.08	0.90	100.63	54.26	0.07
90DCP-256	13	G	G	50.94	0.59	13.50	12.92	0.22	8.17	10.26	1.72	0.51	0.07	1.10	100.00	55.61	0.07
91DCP-001	13	G	G	49.26	0.51	15.32	11.46	0.17	7.51	10.49	1.79	0.40	0.09	2.62	99.61	56.47	

APPENDIX 1. Whole-rock geochemistry of cumulate rocks from the East Bull Lake Intrusion. Part C. Trace element analyses.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-300	6b	yG	AG	122	11	245	9	38		20	164	145	41	235	213	78
90DCP-304	6b	snLG	AG	251	35	261	6	32		15	137	136	46	383	475	99
90DCP-313	6b	snG	AG	195	30	343	9	46		15	125	67	31	139	126	70
90DCP-314	6b	snG	AG	155	27	313	9	51		16	135	51	32	143	122	74
90DCP-315	6b	snG	AG	227	38	324	8	43		16	124	108	32	148	72	71
90DCP-318	6b	snG	AG	131	13	274	9	46		16	125	67	33	152	128	68
90DCP-320	6b	snG	AG	202	37	322	8	39		18	134	98	33	177	197	82
90DCP-322	6b	G	AG	148	15	257	8	37		22	124	178	38	193	96	70
90DCP-327	6b	snG	AG	122	17	262	8	38		18	107	96	50	276	531	84
90DCP-330	6b	snG	AG	120	10	282	10	52		19	124	95	39	253	323	67
90DCP-331	6b	LG	AG	115	15	261	8	36		21	129	165	39	258	143	79
90DCP-332	6b	MG	AG	113	10	274	7	34		20	108	109	38	147	89	71
90DCP-333	6b	G	AG	142	22	274	8	33		19	111	174	51	394	749	97
90DCP-335	6b	snLG	AG	119	19	304	15	76		17	118	74	24	108	173	63
90DCP-336	6b	snLG	AG	152	13	283	9	49		14	142	40	34	196	268	80
90DCP-337	6b	snG	AG	162	17	281	10	42		14	129	64	30	144	78	64
90DCP-339	6b	snG	AG	146	14	289	10	52		12	124	23	27	138	198	59
90DCP-340	6b	snG	AG	116	12	288	8	41		14	103	67	31	160	115	62
90DCP-321	6b	G	G	154	16	227	8	33		21	157	140	49	227	111	90
90DCP-323	6b	G	G	148	18	241	7	37		15	144	115	44	244	115	72
90DCP-324	6b	G	G	170	15	237	8	43		17	124	152	41	199	133	76
90DCP-292	7a	nLG	GA	138	17	276	5	26		13	103	38	18	42	119	63
90DCP-298	7a	nG	GA	163	25	338	6	33		12	100	110	20	77	43	55
90DCP-307	7a	nLG	GA	209	47	416	8	38		9	74	25	17	48	20	49
90DCP-309	7a	nLG	GA	315	58	359	7	33		12	75	49	18	61	104	83
90DCP-317	7a	snG	GA	230	35	331	10	55		15	144	34	30	149	91	88
90DCP-047	7b	A	A	156	13	376		21		7	43	60	12	51	32	23
91DCP-112	7b	A	A	310	39	483	11	29	4.7		39	44	28	124	44	57
90DCP-236	7b	A	GA	278	14	368		34		7	62	27	13	43	56	33
90DCP-360	7b	snLG	GA	98	14	333	5	12		7	43	35	34	207	227	54
90DCP-361	7b	snLG	GA	204	30	470	5	15		7	40	40	18	79	77	30
90DCP-376	7b	G	GA				6			13	60	97	32	323	613	59
90DCP-400	7b	A	GA	149	13	412	6	43		9	76	28	15	34	61	34
90DCP-408	7b	LG	GA	133	12	322		20		6	33	30	29	216	316	34
91DCP-111	7b	GA	GA	269	30	402	14	36	6.3		73	155	28	83	73	53
91DCP-113	7b	GA	GA	149	18	385	11	35	6.3		68	90	28	362	548	58
91DCP-114	7b	GA	GA	127	21	378	10	28	6.1		45	66	28	674	954	67
91DCP-115	7b	GA	GA	125	15	367	10	25	3.3		37	74	32	542	677	48
91DCP-116	7b	GA	GA	130	15	346	12	37	6.7		78	157	28	169	157	50
91DCP-119	7b	GA	GA	257	21	380	13	50	6.2		58	53	25	96	62	46
91DCP-121	7b	GA	GA	202	20	436	11	28	3.9		56	154	40	651	1070	127
91DCP-124	7b	GA	GA	218	31	494	11	32	5.7		35	48	20	42	49	39
91DCP-131	7b	GA	GA	603	53	302	11	33	7.4		74	209	37	121	27	53
91DCP-133	7b	GA	GA	208	20	357	11	30	6.7		56	51	19	60	48	49
91DCP-179A	7b	GA	GA	155	17	394	10	27	7.1		44	63	38	699	1032	46
90DCP-044	7b	G	AG	183	13	291		34		12	74	44	39	190	36	72

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-045	7b	snLG	AG	256	27	284	11	54		18	165	96	30	110	86	67
90DCP-046	7b	A	AG	127	14	342		18		13	62	264	23	112	18	32
90DCP-073	7b	LG	AG	147	15	295		34		13	89	88	32	128	62	51
90DCP-074	7b	G	AG	84	20	211	12	54		8	43	153	56	471	63	77
90DCP-081	7b	G	AG	135	10	257	6	37		18	153	99	41	157	61	72
90DCP-234	7b	LG	AG	98	12	261		19		5	38	29	45	421	77	54
90DCP-235	7b	A	AG	284	35	289		28		10	85	20	30	122	33	60
90DCP-238	7b	LG	AG	132	19	246		13		7	45	81	52	285	79	76
90DCP-240	7b	G	AG	235	22	242	7	37		14	122	65	42	235	68	72
90DCP-359	7b	vtLG	AG	154	18	380	5	20		17	97	88	32	138	45	48
90DCP-372	7b	LG	AG							8	47	39	65	1340	3480	66
90DCP-392	7b	LG	AG	120	12	306		27		13	75	270	39	240	52	56
90DCP-393	7b	LG	AG	105	12	324		25		10	58	56	41	247	32	54
90DCP-394	7b	LG	AG				5			18	88	298	60	640	1780	66
91DCP-117	7b	AG	AG	146	12	330	12	33	6.5		66	137	49	663	2334	136
91DCP-120	7b	AG	AG	126	17	291	12	30	5.4		68	130	43	291	199	72
91DCP-123	7b	AG	AG	114	13	291	12	24	3.5		73	432	78	1120	1580	135
91DCP-125	7b	AG	AG	133	12	294	25	58	9.8		206	46	50	314	1180	103
91DCP-126	7b	AG	AG	157	16	387	12	32	6.3		70	127	31	99	140	59
91DCP-132	7b	AG	AG	181	20	308	13	30	5.4		77	148	26	88	49	49
91DCP-134	7b	AG	AG	173	20	264	12	31	8.2		79	136	50	172	75	78
91DCP-135	7b	AG	AG	168	18	301	13	34	5.3		60	91	33	132	26	54
91DCP-137	7b	AG	AG	188	19	282	12	35	5.6		87	120	42	229	82	64
91DCP-139	7b	AG	AG	178	18	263	17	72	9.5		69	94	38	99	71	45
91DCP-140	7b	AG	AG	157	16	273	14	35	7.2		100	120	54	618	476	81
91DCP-141A	7b	AG	AG	249	24	283	13	41	6.5		129	65	38	185	119	61
91DCP-141B	7b	AG	AG	203	19	279	14	45	6.8		143	54	41	157	87	62
91DCP-142	7b	AG	AG	223	17	296	16	46	7.8		149	159	34	131	79	62
91DCP-179C	7b	AG	AG	134	17	377	11	24	4.2		57	86	57	1220	1450	65
91DCP-179D	7b	AG	AG	148	20	351	13	26	6.7		57	115	51	852	787	54
90DCP-043	7b	G	G	92	13	247		13		16	83	480	57	266	19	75
90DCP-239	7b	G	G	122	13	175		33		14	101	120	67	425	52	76
91DCP-110	7b	G	G	147	20	226	15	54	5.8		151	240	47	156	178	75
91DCP-118	7b	G	G	84	14	203	17	76	7.9		241	282	56	257	338	82
91DCP-127	7b	G	G	120	16	221	29	151	8.6		382	87	52	161	175	66
91DCP-128	7b	G	G	153	17	152	26	95	13.0		773	124	61	175	337	100
91DCP-129	7b	G	G	426	49	146	29	112	11.0		529	99	62	140	212	96
91DCP-136	7b	G	G	174	28	229	12	33	3.8		117	129	52	224	92	68
91DCP-138	7b	G	G	164	22	186	17	51	7.3		197	222	71	316	74	107
91DCP-143	7b	G	G	268	27	293	17	66	7.6		142	205	58	336	140	97
91DCP-179B	7b	G	G	141	14	254	14	36	9.7		112	195	105	2090	1850	93
91DCP-130	7b	MG	MG	420	61	31	25	112	11.0		777	334	93	384	607	131
91DCP-094	8	GA	GA	299	42	366	11	37	4.4		63	166	21	39	56	47
91DCP-095	8	GA	GA	172	31	345	13	38	6.0		56	77	35	58	26	57
91DCP-096	8	GA	GA	378	77	343	9	26	5.7		32	29	21	134	163	80
91DCP-097	8	GA	GA	293	64	367	11	35	6.7		84	94	23	73	38	41
91DCP-104	8	GA	GA	203	43	393	13	60	5.8		27	18	16	43	110	35

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
91DCP-105	8	GA	GA	235	39	369	10	32	5.3		59	258	27	151	52	52
90DCP-038	8	yG	AG	184	14	328	6	40		14	74	99	28	100	32	61
90DCP-039	8	G	AG	200	12	272	8	47		18	175	141	34	137	78	67
90DCP-040	8	G	AG	146	13	280	6	31		16	89	107	29	102	28	57
90DCP-041	8	G	AG	213	19	253	9	41		16	121	86	38	128	75	70
90DCP-071	8	G	AG	224	25	332	6	34		19	82	115	25	99	25	65
90DCP-072	8	LG	AG	116	17	274	5	28		17	89	186	33	120	11	63
90DCP-232	8	G	AG	163	14	326		41		10	109	153	28	160	42	41
90DCP-265	8	G	AG	120	11	257	6	25		22	105	284	32	112	37	56
90DCP-266	8	LG	AG	177	17	292	7	32		18	91	80	30	99	46	55
90DCP-269	8	G	AG	210	21	253	5	25		18	122	150	35	113	52	83
90DCP-270	8	LG	AG	146	16	325	6	38		21	134	132	30	82	103	82
90DCP-398	8	G	AG	165	21	287	8	38		19	143	123	35	165	52	57
90DCP-415	8	snLG	AG	206	18	302	11	65		16	125	62	26	108	52	58
90DCP-416	8	G	AG	149	12	269	9	38		18	93	191	36	142	36	74
90DCP-418	8	G	AG	153	13	239	6	31		13	87	73	46	232	60	74
90DCP-424	8	G	AG	187	14	281	8	45		15	107	50	42	250	78	84
91DCP-092	8	AG	AG	162	25	297	11	42	6.0		55	69	48	260	217	72
91DCP-093	8	AG	AG	140	21	335	11	33	6.5		64	289	37	188	38	53
91DCP-098	8	AG	AG	152	20	326	12	34	5.4		86	168	39	153	103	54
91DCP-100	8	AG	AG	224	48	349	11	42	4.4		62	219	36	210	40	73
91DCP-101	8	AG	AG	164	36	267	16	60	5.4		139	366	49	280	138	78
91DCP-102	8	AG	AG	176	22	321	11	32	5.8		58	219	38	185	46	58
91DCP-103	8	AG	AG	123	35	300	14	38	5.6		89	355	25	109	83	166
91DCP-109	8	AG	AG	47	7.3	184	26	143	13.0		99	43	67	96	261	55
90DCP-070	8	G	G	86	10	170	6	23		9	92	271	94	515	59	97
90DCP-231	8	G	G	107	12	205		23		13	100	153	69	414	52	80
90DCP-262	8	G	G	153	34	206	16	79	4.0	27	192	111	42	128	114	72
90DCP-267	8	LG	G	156	104	202	20	105	4.0	29	205	104	39	77	144	95
90DCP-268	8	G	G	117	13	223	7	31		23	113	269	43	137	36	74
90DCP-397	8	G	G	107	25	110		17		8	84	117	90	567	69	92
90DCP-399	8	G	G	134	17	217	6	28		14	87	132	61	324	47	81
90DCP-417	8	G	G	183	19	203	10	43		19	124	77	52	226	80	85
91DCP-099	8	G	G	174	31	247	10	26	4.4		52	243	73	837	547	118
91DCP-106	8	G	G	126	37	218	16	53	5.8		170	438	46	362	300	86
91DCP-107	8	G	G	49	8	108	29	153	11.0		140	104	65	241	180	84
91DCP-108	8	G	G	51	8.8	152	26	139	9.5		129	89	55	182	181	63
90DCP-053	9	G	GA	238	20	340	8	42		14	113	73	27	112	58	45
90DCP-054	9	G	GA	232	19	346	9	54		11	110	70	23	104	64	43
90DCP-413	9	G	GA	190	15	359	10	61		12	134	47	22	89	127	42
90DCP-419	9	snLG	GA	322	30	380	13	71		15	98	66	29	113	149	83
90DCP-422	9	LG	GA	166	15	350	7	45		9	59	44	23	120	23	43
91DCP-079A	9	GA	GA	132	24	353	11	32	3.1		43	52	38	219	25	68
91DCP-079B	9	GA	GA	311	67	402	12	38	4.5		57	40	23	194	178	91
91DCP-080	9	GA	GA	115	23	367	11	28	4.5		34	43	29	160	30	56
91DCP-082	9	GA	GA	123	30	471	10	30	5.2		39	37	21	44	42	33
90DCP-035	9	G	AG	210	74	253	13	73		24	173	74	37	95	111	87

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-042	9	G	AG	207	13	278	9	57		12	146	19	33	139	109	62
90DCP-052	9	yMG	AG	280	31	435	8	64		7	70	10	23	113	38	39
90DCP-056	9	G	AG	195	17	270	7	42		13	88	93	38	189	21	62
90DCP-057	9	G	AG	226	19	347	6	40		14	106	100	35	195	26	50
90DCP-230	9	G	AG	142	11	255	9	43		11	146	96	44	256	55	56
90DCP-242	9	G	AG	180	20	302		40		8	82	61	57	318	58	71
90DCP-387	9	LG	AG	168	19	311	8	41		17	84	69	25	104	30	60
90DCP-388	9	G	AG	145	18	278	7	33		19	146	179	38	217	46	62
90DCP-389	9	G	AG	160	14	291	7	38		12	117	76	39	252	84	69
90DCP-390	9	LG	AG	183	18	320	8	44		15	124	65	28	134	26	63
90DCP-391	9	LG	AG	149	13	315	5	35		10	111	28	28	162	74	44
90DCP-409	9	OG	AG	120	10	248		24		12	64	65	42	320	138	68
90DCP-411	9	OG	AG	151	15	254	7	32		13	85	70	44	254	33	60
90DCP-412	9	LG	AG	145	11	267	7	37		12	88	51	44	256	66	71
90DCP-414	9	LG	AG	164	14	281	9	44		17	132	59	35	171	37	58
90DCP-420	9	LG	AG	322	54	293	9	42		15	105	68	29	114	152	84
90DCP-421	9	G	AG	166	12	310	7	45		11	84	64	29	151	55	50
90DCP-425	9	LG	AG	183	18	295	8	51		14	139	52	30	128	135	62
90DCP-426	9	LG	AG	156	13	239	8	39		16	103	126	40	196	26	67
90DCP-427	9	G	AG	162	12	282	7	38		14	109	72	30	128	31	62
90DCP-428	9	G	AG	187	16	325	9	57		13	106	46	32	158	101	64
91DCP-047	9	AG	AG	454	69	332	13	46	4.9		89	80	39	243	34	122
91DCP-048	9	AG	AG	326	56	305	13	39	5.0		107	148	40	194	61	217
91DCP-049	9	AG	AG	220	28	326	13	43	7.3		99	95	33	122	124	64
91DCP-050	9	AG	AG	166	19	263	14	42	5.2		96	104	40	203	42	65
91DCP-052	9	AG	AG	202	22	285	14	46	6.0		175	76	39	182	53	60
91DCP-053	9	AG	AG	211	23	341	16	58	6.7		125	61	34	102	89	54
91DCP-054	9	AG	AG	181	15	311	14	43	4.8		90	103	41	130	42	65
91DCP-055	9	AG	AG	170	14	316	14	49	4.8		90	125	43	126	42	72
91DCP-068	9	AG	AG	260	25	285	17	58	5.9		147	210	40	154	40	71
91DCP-070	9	AG	AG	251	26	326	20	106	8.3		150	37	38	136	81	61
91DCP-071	9	AG	AG	197	21	246	16	54	7.7		124	110	50	259	116	86
91DCP-072	9	AG	AG	206	16	329	18	75	6.1		140	62	33	140	66	61
91DCP-075	9	AG	AG	185	25	298	18	66	6.2		145	119	44	130	92	71
91DCP-076	9	AG	AG	291	36	325	18	84	8.8		148	[illegible]	38	129	154	57
91DCP-078	9	AG	AG	317	39	319	20	71	6.8		160	139	37	110	79	64
91DCP-081	9	AG	AG	76	24	314	11	36	6.1		39	39	19	85	26	38
91DCP-083	9	AG	AG	209	51	377	16	58	7.5		128	106	34	118	49	57
91DCP-084	9	AG	AG	170	21	336	14	43	6.6		88	71	41	122	49	60
91DCP-085	9	AG	AG	263	20	349	13	45	7.8		121	73	38	137	59	66
91DCP-086	9	AG	AG	183	17	300	15	49	7.0		100	72	49	239	116	81
91DCP-087	9	AG	AG	202	38	302	9	28	5.0		43	83	56	545	50	71
91DCP-088	9	AG	AG	503	40	300	12	38	6.2		45	90	46	420	34	71
91DCP-089	9	AG	AG	207	50	419	11	45	6.1		40	43	39	326	43	59
91DCP-090	9	AG	AG	153	19	307	15	50	6.1		63	38	43	324	47	61
91DCP-091	9	AG	AG	95	13	317	12	33	5.1		34	51	36	274	49	52
90DCP-036	9	LG	G	190	57	237	16	75		24	175	107	39	111	105	84

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-037	9	G	G	332	53	225	15	84		26	187	37	42	86	98	98
90DCP-102	9	OG	G	117	9	261		30		12	85	61	56	364	61	67
90DCP-198	9	G	G	108	13	173	15	55		46	451	25	57	81	203	112
90DCP-199	9	G	G	200	18	255	19	80		40	250		44	49	147	91
90DCP-200	9	OG	G	266	23	238	9	63		20	141	13	62	109	154	99
90DCP-201	9	G	G	266	18	224	17	63		42	291		51	50	222	120
90DCP-202	9	G	G	213	18	253	17	63		45	924	10	63	69	382	109
90DCP-229	9	G	G	133	19	144		21		9	86	96	76	486	49	86
90DCP-410	9	OG	G	109	9	220		27		12	80	56	46	331	68	68
91DCP-051	9	G	G	143	20	236	13	34	4.0		97	212	43	220	54	68
91DCP-067	9	G	G	214	27	224	14	47	5.3		130	110	66	355	98	98
91DCP-069	9	G	G	267	23	193	16	47	6.3		132	121	75	434	105	108
91DCP-073	9	G	G	155	16	240	16	51	5.5		181	162	50	328	122	82
91DCP-074	9	G	G	125	17	127	14	39	6.5		122	183	81	545	46	126
91DCP-077	9	G	G	139	11	222	16	58	6.4		133	208	59	257	35	90
91DCP-032	10	AG	AG	213	34	275	17	54	7.2		111	255	48	212	54	74
91DCP-033	10	AG	AG	178	15	264	18	53	5.8		146	158	43	193	69	74
91DCP-037	10	AG	AG	155	16	275	14	42	4.6		86	62	55	273	76	63
91DCP-166	10	OAG	AG	157	18	277	16	62	7.0		114	123	53	293	86	59
91DCP-167	10	OAG	AG	184	22	279	16	52	6.8		127	146	43	221	46	66
90DCP-065	10	OG	G	152	10	218		34		14	112	94	51	308	51	73
90DCP-066	10	OG	G	147	14	213		26		12	120	86	74	396	58	87
91DCP-035	10	OG	G	116	13	163	13	40	6.4		103	171	100	575	92	106
91DCP-036	10	OG	G	111	15	183	13	42	8.0		92	144	109	590	94	111
91DCP-038	10	OG	G	81	12	147	12	34	6.4		73	307	122	659	46	99
91DCP-039	10	G	G	136	15	226	13	38	6.8		98	215	84	409	102	82
91DCP-040	10	OG	G	132	11	213	14	36	6.1		75	197	93	520	64	87
91DCP-041	10	OG	G	133	14	208	14	43	5.6		104	220	81	492	77	82
91DCP-162	10	OG	G	89	18	125	14	41	5.9		124	222	111	587	133	98
91DCP-163	10	OG	G	105	16	179	15	46	7.9		95	167	100	568	181	90
91DCP-164	10	G	G	100	15	186	14	46	7.4		85	134	103	607	69	87
91DCP-165	10	OG	G	115	12	162	15	37	5.9		88	241	102	638	38	90
91DCP-168	10	OG	G	124	16	179	17	42	7.5		107	340	101	586	343	108
91DCP-169	10	OG	G	132	20	179	16	52	4.7		92	98	93	666	54	95
91DCP-170	10	OG	G	120	17	232	13	39	8.2		91	240	78	421	68	82
91DCP-029	10	MOG	MG	26	11	41	12	30	4.2		101	372	131	605	144	125
91DCP-030	10	MOG	MG	43	12	45	15	42	3.2		140	691	114	703	81	101
91DCP-031	10	MOG	MG	49	12	47	14	40	6.3		114	429	116	727	96	97
91DCP-034	10	MOG	MG	83	13	133	12	34	3.4		77	253	137	793	75	125
91DCP-161	10	MOG	MG	72	13	120	14	32	4.6		116	397	116	584	79	121
90DCP-067	11a	G	GA	322	55	434	17	87		14	123	41	18	43	63	59
90DCP-058	11a	G	AG	143	12	273	5	36		10	89	75	53	287	35	65
90DCP-059	11a	G	AG	213	16	324	13	62		22	145	77	24	59	61	58
90DCP-061	11a	LG	AG	307	26	338	11	80		17	154	60	22	58	90	58
90DCP-062	11a	G	AG	237	22	258	11	59		23	136	93	34	81	60	66
90DCP-068	11a	G	AG	352	50	307	12	60		23	115	74	35	86	87	69
90DCP-069	11a	G	AG	264	24	294	12	65		24	218	75	32	77	140	71

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-082	11a	G	AG	192	13	257	11	63		29	183	180	35	78	44	81
91DCP-021	11a	AG	AG	676	74	274	21	80	9.1		246	114	47	73	126	94
91DCP-022	11a	AG	AG	369	38	276	20	85	7.0		236	121	51	66	85	92
91DCP-025	11a	AG	AG	183	25	363	15	50	4.9		97	49	42	91	49	70
91DCP-026	11a	AG	AG	416	56	309	13	41	4.3		106	39	34	116	107	112
91DCP-027	11a	AG	AG	232	23	284	14	52	4.3		130	100	44	150	153	119
90DCP-060	11a	MG	G	171	12	246	12	44		28	155	225	41	119	87	68
90DCP-083	11a	G	G	192	16	201	14	57		34	219	208	45	106	114	91
90DCP-084	11a	G	G	217	18	246	10	51		28	163	123	39	95	115	75
90DCP-085	11a	G	G	219	12	211		13		34	198	188	44	101	91	88
90DCP-086	11a	G	G	228	17	251	13	60		33	190	179	40	94	75	94
90DCP-089	11a	G	G	173	11	192	18	88		32	206	116	45	88	55	98
90DCP-090	11a	G	G	189	14	235	15	59		30	218	84	41	76	99	83
91DCP-019	11a	G	G	256	22	167	21	82	7.4		292	506	58	153	187	95
91DCP-020	11a	G	G	229	22	181	18	63	6.4		146	173	71	227	75	113
91DCP-024	11a	G	G	159	23	127	13	49	7.4		94	73	98	448	94	150
91DCP-028	11a	G	G	257	41	217	17	58	6.0		157	336	41	120	75	81
90DCP-111	11b	A	A	1120	64	276		13		5	29	36	13	46	4	22
90DCP-170	11b	LG	GA	180	26	428		42		9	98	57	14	39	88	43
90DCP-208	11b	pLG	GA	307	23	318	20	109		14	82		24	18	109	70
90DCP-110	11b	LG	AG	146	43	304		18		18	79	187	39	161	26	54
90DCP-112	11b	G	AG	154	27	221	7	37		18	125	73	45	141	39	77
90DCP-162	11b	MG	AG	596	70	130	27	138		32	288	15	39	45	156	170
90DCP-163	11b	G	AG	554	69	128	30	168		30	254	13	34	37	303	94
90DCP-165	11b	G	AG	363	49	287	15	57		30	355		37	36	204	78
90DCP-171	11b	LG	AG	196	19	281	11	65		22	141	76	37	92	83	78
90DCP-178	11b	G	AG	160	13	280	9	53		23	115	108	32	83	70	68
90DCP-191	11b	LG	AG	322	69	249	15	61		27	185		37	33	196	100
90DCP-192	11b	LG	AG	424	56	306	14	68		21	116		25	27	98	74
90DCP-203	11b	pLG	AG	213	21	257	12	62		23	130	12	34	38	81	80
90DCP-204	11b	G	AG	269	16	268	13	75		18	90		26	24	77	83
90DCP-205	11b	G	AG	288	23	248	16	67		29	249	13	35	38	156	102
90DCP-207	11b	G	AG	294	30	284	14	68		25	249		29	29	141	100
90DCP-221	11b	LG	AG	439	54	347		33		17	129	121	37	104	37	77
90DCP-226	11b	G	AG	399	59	263	17	78		13	261		41	20	282	133
90DCP-113	11b	G	G	198	37	222	18	77		32	237	61	41	82	96	82
90DCP-115	11b	G	G	225	43	200	15	72		34	206	57	39	74	78	77
90DCP-116	11b	smG	G	259	61	188	17	67		32	253	48	47	76	137	99
90DCP-132	11b	G	G	864	130	235	14	62		34	196	46	43	80	94	105
90DCP-134	11b	G	G	495	48	247	16	70		39	411	16	48	68	272	102
90DCP-135	11b	G	G	88	12	243	17	78		32	339	28	51	78	166	99
90DCP-166	11b	LG	G	135	22	279		13		21	78	251	45	507	1520	67
90DCP-169	11b	LG	G	192	33	225	25	110		23	184	105	48	503	334	74
90DCP-173	11b	MG	G	191	16	213	15	69		34	214	117	44	90	108	86
90DCP-175	11b	G	G	232	54	245	12	51		40	218	10	50	72	143	88
90DCP-177	11b	G	G	231	22	243	15	63		35	219	165	38	88	86	73
90DCP-193	11b	LG	G	303	47	225	13	59		36	485	10	46	40	271	107

APPENDIX 1, Part C (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-260	12	G	AG	126	14	257	10	47		22	132	89	43	128	67	83
91DCP-009	12	AG	AG	256	24	306	18	68	6.8		188	117	44	66	107	67
91DCP-011	12	AG	AG	217	20	285	17	67	5.3		138	120	55	71	69	67
91DCP-012	12	AG	AG	163	19	271	15	53	5.4		97	130	45	88	43	71
91DCP-013	12	AG	AG	204	17	307	17	55	7.9		107	177	47	96	76	68
90DCP-087	12	DG	G	231	22	228	15	63		40	264	295	45	104	115	90
90DCP-088	12	DG	G	206	23	221	15	65		37	224	360	43	103	85	87
90DCP-104	12	DG	G	207	32	222	13	62		27	151	78	54	113	59	74
90DCP-114	12	DG	G	456	59	213	24	106		33	271	23	42	53	129	103
90DCP-117	12	DG	G	314	66	200	21	103		32	305	51	44	70	154	95
90DCP-133	12	DG	G	654	54	223	15	58		36	244	67	45	87	96	90
90DCP-160	12	pG	G	403	62	220	22	106		33	287	28	40	59	114	139
90DCP-161	12	DG	G	372	45	203	23	107		34	331	25	40	55	198	130
90DCP-172	12	MG	G	174	18	221	13	62		32	140	181	45	110	79	82
90DCP-174	12	DG	G	155	16	225	20	81		35	179	254	38	88	89	70
90DCP-176	12	DG	G	207	19	202	13	61		43	217	248	44	105	54	86
90DCP-197	12	DG	G	332	35	214	18	86		38	254	34	47	75	153	105
90DCP-250	12	G	G	243	26	258	9	37		23	143	175	40	112	107	71
90DCP-251	12	G	G	235	12	226	9	48		24	147	206	40	98	37	75
90DCP-252	12	pG	G	252	26	192	12	48		29	198	301	46	128	49	82
91DCP-005	12	G	G	183	24	212	19	72	4.8		155	230	49	95	97	82
91DCP-006	12	G	G	201	20	234	18	53	5.2		158	151	50	95	80	73
91DCP-007	12	G	G	233	20	198	18	64	7.4		243	282	70	106	69	95
91DCP-008	12	G	G	214	20	194	18	67	6.2		178	360	63	126	100	91
91DCP-010	12	G	G	233	24	247	16	62	7.4		175	188	57	95	105	80
91DCP-015	12	G	G	180	19	219	19	66	6.0		301	300	60	143	258	93
91DCP-016	12	G	G	202	18	247	18	65	5.9		157	315	49	98	77	76
91DCP-017	12	G	G	240	19	194	23	114	8.2		886	291	73	137	335	118
91DCP-018	12	MG	MG	18	8	21	12	35	6.1		107	269	115	581	513	180
90DCP-123	13	G	AG	523	66	221	27	121		34	289	41	42	54	183	153
90DCP-124	13	G	AG	739	82	244	28	153		29	295	16	41	45	149	153
90DCP-127	13	G	AG	778	78	235	24	127		27	242	15	37	41	150	207
90DCP-157	13	G	AG	868	107	239	19	104		33	280	32	38	65	124	80
91DCP-002	13	AG	AG	298	27	301	21	84	8.1		152	109	48	62	94	76
90DCP-003	13	AG	AG	250	24	278	18	73	7.1		136	142	54	76	43	85
90DCP-091	13	G	G	145	12	236	13	54		34	205	108	42	82	136	82
90DCP-093	13	G	G	151	12	227	11	66		26	178	58	41	76	79	75
90DCP-094	13	G	G	185	15	253	15	65		30	191	82	38	71	74	77
90DCP-095	13	G	G	211	17	228	12	47		36	209	104	45	90	93	88
90DCP-096	13	G	G	237	21	238	15	72		28	218	111	37	72	96	81
90DCP-121	13	G	G	854	91	131	29	154		30	261	17	41	40	203	259
90DCP-122	13	G	G	723	50	154	27	147		30	289	13	41	43	143	175
90DCP-126	13	G	G	622	74	80	30	183		30	287	14	36	41	96	314
90DCP-128	13	DG	G	353	47	204	20	90		36	449	10	49	53	225	105
90DCP-129	13	G	G	346	50	172	24	120		32	294	44	47	56	185	118
90DCP-130	13	G	G	293	46	191	15	62		35	215	28	44	75	39	95
90DCP-141	13	G	G	169	19	181	18	67		45	249	71	47	60	137	149

APPENDIX 1, Part C (continued)

SAMPLE #	UNIT	NAME 1	NAME 2	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-142	13	G	G	170	15	162	17	66		43	244	56	46	56	138	109
90DCP-150	13	G	G	376	41	142	26	155		31	280	13	41	42	175	225
90DCP-151	13	G	G	145	13	398	25	103		24	254	17	31	41	49	79
90DCP-153	13	G	G	437	86	59	21	97		38	458	23	43	72	432	189
90DCP-154	13	G	G	508	90	28	18	137		27	334	21	35	52	19	179
90DCP-156	13	G	G	843	120	231	17	81		35	371	27	46	61	283	104
90DCP-188	13	G	G	306	46	31	32	161		35	323	25	44	49	178	106
90DCP-189	13	MS	G	755	93	28	28	181		33	376		45	44	28	100
90DCP-195	13	G	G	162	19	248	30	125		40	303	50	45	69	426	95
90DCP-253	13	MG	G	210	14	182	20	80		34	248	184	46	108	103	84
90DCP-254	13	G	G	233	22	237	14	70		24	196	78	37	76	93	80
90DCP-255	13	G	G	283	23	219	14	65		27	194	110	42	84	81	80
90DCP-256	13	G	G	184	16	184	12	58		25	201	92	47	125	84	88
91DCP-001	13	G	G	175	19	201	16	57	7.0		215	248	62	156	94	99

APPENDIX 1. Whole-rock geochemistry of cumulate rocks from the East Bull Lake Intrusion. Part D. Molecular normative mineralogy.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-300	6b	yG	AG	0.00	0.00	2.05	20.57	41.83	0.00	9.24	17.11	7.11	1.15	0.80	0.15	64.90	35.40
90DCP-304	6b	snLG	AG	0.00	0.00	4.88	20.97	42.68	0.00	5.05	13.17	11.30	1.27	0.56	0.11	62.28	31.36
90DCP-313	6b	snG	AG	0.00	0.00	4.87	26.05	43.82	0.00	9.13	5.54	8.87	0.91	0.64	0.17	58.63	25.08
90DCP-314	6b	snG	AG	0.00	0.00	4.72	22.51	48.60	0.00	6.39	8.98	7.04	0.96	0.64	0.17	64.10	24.00
90DCP-315	6b	snG	AG	0.00	0.00	6.37	23.39	44.89	0.00	8.31	5.08	10.31	0.96	0.54	0.15	60.13	25.20
90DCP-318	6b	snG	AG	0.00	0.00	2.41	22.27	47.41	0.00	9.06	13.26	3.80	1.01	0.61	0.17	65.76	27.74
90DCP-320	6b	snG	AG	0.00	0.00	6.05	22.96	44.10	0.00	7.60	9.25	8.35	0.94	0.60	0.15	60.32	26.74
90DCP-322	6b	G	AG	0.00	0.00	3.00	21.68	40.27	0.00	12.46	14.70	6.24	1.05	0.47	0.13	62.00	34.93
90DCP-327	6b	snG	AG	0.00	0.00	3.32	21.84	41.00	0.00	8.51	13.62	9.94	1.17	0.46	0.13	61.97	33.70
90DCP-330	6b	snG	AG	0.00	0.00	1.93	23.25	43.35	0.00	10.78	13.96	4.88	1.02	0.65	0.17	63.27	31.30
90DCP-331	6b	LG	AG	0.00	0.00	2.40	22.32	42.69	0.00	10.65	10.73	9.44	1.09	0.55	0.13	63.33	32.47
90DCP-332	6b	MG	AG	0.00	0.00	2.22	22.30	40.67	0.00	11.76	17.05	4.38	1.04	0.47	0.11	62.39	34.70
90DCP-333	6b	G	AG	0.00	0.00	4.09	20.75	40.74	0.00	11.24	11.23	10.21	1.09	0.52	0.13	62.12	34.29
90DCP-335	6b	snLG	AG	0.22	0.00	3.02	25.40	44.75	0.00	8.60	16.15	0.00	0.91	0.74	0.22	61.16	26.40
90DCP-336	6b	snLG	AG	0.00	0.00	2.67	22.49	47.71	0.00	7.78	8.63	8.68	1.11	0.74	0.17	65.47	26.95
90DCP-337	6b	snG	AG	0.00	0.00	2.95	22.39	48.55	0.00	9.03	9.66	5.63	0.98	0.65	0.15	65.71	25.96
90DCP-339	6b	snG	AG	0.00	0.00	2.69	23.32	49.84	0.00	7.74	11.19	3.45	0.91	0.68	0.17	65.71	23.98
90DCP-340	6b	snG	AG	0.00	0.00	2.46	22.94	48.88	0.00	8.52	9.36	6.19	0.94	0.57	0.15	65.80	25.57
90DCP-321	6b	G	G	0.00	0.00	2.66	19.40	37.64	0.00	12.53	18.39	7.39	1.24	0.63	0.13	63.05	40.17
90DCP-323	6b	G	G	0.00	0.00	3.08	20.34	39.92	0.00	11.17	15.35	8.18	1.16	0.67	0.13	63.03	36.53
90DCP-324	6b	G	G	0.00	0.00	3.14	21.11	37.52	0.00	11.27	21.77	3.39	1.12	0.51	0.17	60.75	38.06
90DCP-292	7a	nLG	GA	0.10	0.00	3.51	22.82	56.47	0.00	5.54	10.15	0.00	0.70	0.56	0.15	68.20	16.95
90DCP-298	7a	nG	GA	0.00	0.00	4.85	22.73	56.43	0.83	2.81	0.00	10.98	0.76	0.48	0.13	67.17	15.03
90DCP-307	7a	nLG	GA	0.00	0.00	7.28	27.79	48.28	4.78	1.81	0.00	8.87	0.70	0.35	0.13	57.92	11.73
90DCP-309	7a	nLG	GA	0.00	0.00	10.44	19.59	52.91	2.63	5.14	0.00	8.07	0.62	0.44	0.15	63.79	14.27
90DCP-317	7a	snG	GA	0.00	0.00	4.84	29.43	41.79	3.08	3.50	0.00	15.27	1.11	0.83	0.15	54.94	20.71
90DCP-047	7b	A	A	0.88	0.00	2.83	17.14	69.09	0.00	2.26	7.35	0.00	0.29	0.14	0.01	77.58	10.05
91DCP-112	7b	A	A	0.00	0.00	5.64	22.58	59.93	2.58	0.59	0.00	8.01	0.44	0.19	0.06	67.99	9.22
90DCP-236	7b	A	GA	0.00	0.00	2.65	17.76	63.04	5.00	5.32	0.00	5.30	0.53	0.31	0.11	75.54	11.44
90DCP-360	7b	snLG	GA	0.00	0.00	2.50	24.29	52.76	0.00	4.67	2.75	12.13	0.70	0.14	0.06	66.32	20.39
90DCP-361	7b	snLG	GA	0.00	0.00	5.69	17.16	57.49	3.79	8.39	0.00	6.73	0.54	0.13	0.09	71.56	15.79
90DCP-376	7b	G	GA	0.00	0.00	5.15	28.89	45.33	0.00	6.05	3.77	9.87	0.81	0.03	0.09	57.11	20.53
90DCP-400	7b	A	GA	0.00	0.00	2.93	24.05	60.70	0.13	6.93	0.00	4.18	0.45	0.51	0.13	69.23	12.07
90DCP-408	7b	LG	GA	0.00	0.00	2.57	19.51	58.18	0.50	4.86	0.00	13.51	0.60	0.18	0.09	72.49	19.15
91DCP-111	7b	GA	GA	0.00	0.00	4.54	28.03	49.56	1.10	7.09	0.00	8.78	0.57	0.27	0.06	60.34	16.71
91DCP-113	7b	GA	GA	0.00	0.00	2.23	23.41	57.01	0.00	5.83	3.41	7.12	0.60	0.34	0.06	68.98	17.29
91DCP-114	7b	GA	GA	0.00	0.00	2.75	20.47	62.77	1.64	2.53	0.00	9.03	0.55	0.21	0.05	73.00	12.33
91DCP-115	7b	GA	GA	0.00	0.00	1.52	23.34	62.79	0.00	3.45	0.76	7.41	0.52	0.16	0.05	71.64	12.30
91DCP-116	7b	GA	GA	0.00	0.00	1.85	24.15	54.04	0.00	8.25	4.52	6.22	0.59	0.29	0.08	67.51	19.88
91DCP-119	7b	GA	GA	0.00	0.00	2.80	25.25	56.74	0.00	5.08	0.00	9.11	0.58	0.33	0.11	66.91	15.10
91DCP-121	7b	GA	GA	0.00	0.00	3.39	20.86	56.46	4.55	5.97	0.00	7.79	0.71	0.21	0.05	69.96	14.68
91DCP-124	7b	GA	GA	0.00	0.00	4.39	20.24	57.84	6.50	4.86	0.00	5.36	0.54	0.23	0.05	70.14	10.99
91DCP-131	7b	GA	GA	0.00	0.00	9.00	24.26	47.17	0.00	5.03	0.14	13.31	0.84	0.19	0.06	58.64	19.50
91DCP-133	7b	GA	GA	0.00	0.00	2.34	25.52	50.53	5.50	9.31	0.00	6.04	0.53	0.17	0.04	64.45	16.06
91DCP-179A	7b	GA	GA	0.00	0.00	2.17	24.86	58.73	0.84	4.91	0.00	7.70	0.57	0.15	0.07	68.48	13.33
90DCP-044	7b	G	AG	0.00	0.00	2.33	18.39	50.81	0.00	4.89	17.43	4.79	1.03	0.28	0.05	71.04	28.42

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-045	7b	snLG	AG	0.00	0.00	5.35	19.73	45.90	0.00	8.77	18.16	0.11	0.99	0.86	0.11	64.67	28.91
90DCP-046	7b	A	AG	0.00	0.00	3.37	15.91	59.85	0.00	7.10	11.52	1.58	0.51	0.16	0.00	75.64	20.87
90DCP-073	7b	LG	AG	0.33	0.00	3.18	18.43	51.12	0.00	6.34	19.32	0.00	0.82	0.37	0.09	70.29	26.85
90DCP-074	7b	G	AG	0.00	0.00	1.46	10.22	52.80	0.00	3.12	18.56	12.66	1.06	0.12	0.00	81.89	35.52
90DCP-081	7b	G	AG	2.07	0.00	1.63	15.56	47.23	0.00	8.20	23.48	0.00	1.09	0.65	0.09	73.31	33.43
90DCP-234	7b	LG	AG	0.00	0.00	1.82	14.55	54.01	0.00	5.33	7.44	15.56	1.06	0.17	0.07	76.74	29.56
90DCP-235	7b	A	AG	0.00	0.00	5.93	24.95	46.59	0.00	7.95	4.60	8.77	0.77	0.37	0.06	60.13	22.46
90DCP-238	7b	LG	AG	0.00	0.00	2.80	16.35	50.67	0.00	4.18	7.01	17.67	1.11	0.14	0.07	72.58	30.12
90DCP-240	7b	G	AG	0.00	0.00	4.00	16.36	44.89	0.00	9.21	20.52	3.14	1.18	0.59	0.11	68.80	34.65
90DCP-359	7b	vlLG	AG	0.00	0.00	3.46	24.56	44.38	0.00	11.28	8.66	6.53	0.77	0.27	0.09	61.30	27.52
90DCP-372	7b	LG	AG	0.00	0.00	4.98	13.43	53.16	8.29	7.76	0.00	11.15	0.90	0.27	0.06	74.28	20.07
90DCP-392	7b	LG	AG	0.00	0.00	2.04	18.87	49.99	0.00	8.04	7.03	12.76	0.85	0.31	0.11	70.50	28.99
90DCP-393	7b	LG	AG	0.00	0.00	2.28	21.42	49.17	0.00	7.08	3.03	15.80	0.84	0.27	0.11	67.47	27.02
90DCP-394	7b	LG	AG	0.00	0.00	1.99	23.18	40.81	0.00	10.28	7.18	14.69	1.18	0.69	0.00	61.85	34.02
91DCP-117	7b	AG	AG	0.00	0.00	1.46	22.77	53.17	0.00	10.02	2.28	9.24	0.75	0.25	0.05	68.70	22.55
91DCP-120	7b	AG	AG	0.00	0.00	2.28	20.30	52.58	0.00	3.34	10.82	9.49	0.89	0.23	0.07	69.95	24.77
91DCP-123	7b	AG	AG	0.00	0.00	1.31	20.62	47.11	0.00	5.61	2.33	21.29	1.50	0.19	0.04	68.24	30.92
91DCP-125	7b	AG	AG	4.65	0.00	1.43	26.01	34.26	0.00	15.47	14.98	0.00	1.10	1.68	0.43	55.53	33.22
91DCP-126	7b	AG	AG	0.00	0.00	1.93	24.80	47.76	4.22	10.86	0.00	9.34	0.75	0.27	0.06	64.11	21.22
91DCP-132	7b	AG	AG	0.00	0.00	2.66	26.56	49.49	0.00	10.00	6.00	4.43	0.62	0.20	0.04	62.87	21.26
91DCP-134	7b	AG	AG	0.00	0.00	2.44	24.32	46.94	0.00	1.45	11.90	11.54	1.19	0.19	0.04	63.69	26.26
91DCP-135	7b	AG	AG	0.00	0.00	2.43	27.24	46.66	0.00	8.23	12.50	2.06	0.68	0.17	0.02	61.13	23.65
91DCP-137	7b	AG	AG	0.00	0.00	2.73	21.07	51.80	0.00	6.96	0.40	15.66	0.95	0.38	0.07	68.52	24.35
91DCP-139	7b	AG	AG	10.96	0.00	2.09	41.21	26.85	0.00	9.70	8.20	0.00	0.55	0.36	0.09	38.28	18.81
91DCP-140	7b	AG	AG	0.00	0.00	1.60	21.12	45.54	0.00	8.33	9.81	12.09	1.07	0.35	0.09	66.71	31.65
91DCP-141A	7b	AG	AG	0.68	0.00	3.29	25.05	44.49	0.00	9.07	16.04	0.00	0.93	0.39	0.05	61.08	26.44
91DCP-141B	7b	AG	AG	4.60	0.00	2.01	24.52	43.97	0.00	7.18	16.32	0.00	0.84	0.49	0.06	62.38	24.84
91DCP-142	7b	AG	AG	2.38	0.00	2.61	26.88	37.78	0.00	12.65	16.31	0.00	0.97	0.38	0.04	56.15	30.31
91DCP-179C	7b	AG	AG	0.00	0.00	1.90	25.53	50.21	0.00	7.82	3.69	9.77	0.90	0.14	0.03	64.67	22.32
91DCP-179D	7b	AG	AG	0.00	0.00	2.41	26.65	47.63	0.00	7.71	4.53	9.99	0.85	0.18	0.04	62.10	23.26
90DCP-043	7b	G	G	0.00	0.00	2.05	9.56	43.49	0.00	13.95	15.68	13.96	1.10	0.18	0.05	78.94	44.86
90DCP-239	7b	G	G	0.00	0.00	1.94	17.19	34.35	0.00	11.00	18.02	15.56	1.42	0.43	0.09	64.24	46.43
91DCP-110	7b	G	G	1.62	0.00	2.93	19.81	34.84	0.00	14.85	24.10	0.00	1.09	0.64	0.12	60.50	40.68
91DCP-118	7b	G	G	0.00	0.00	1.27	17.79	33.07	0.00	20.31	21.04	3.96	1.19	1.23	0.14	63.43	47.73
91DCP-127	7b	G	G	13.35	0.00	1.65	15.16	29.32	0.00	18.84	18.66	0.00	1.44	1.29	0.29	63.56	40.23
91DCP-128	7b	G	G	5.60	0.00	2.88	13.05	29.98	0.00	20.61	22.61	0.00	2.15	2.93	0.19	65.31	48.30
91DCP-129	7b	G	G	4.85	0.00	8.57	14.19	26.57	0.00	17.23	24.04	0.00	2.11	2.13	0.31	53.87	45.51
91DCP-136	7b	G	G	0.00	0.00	3.40	19.30	39.97	0.00	10.20	22.14	3.50	1.13	0.26	0.10	63.78	37.24
91DCP-138	7b	G	G	0.00	0.00	2.76	15.25	36.82	0.00	9.62	25.16	7.82	1.68	0.77	0.12	67.15	45.05
91DCP-143	7b	G	G	1.75	0.00	3.44	23.97	32.14	0.00	11.65	25.19	0.00	1.21	0.55	0.10	53.97	38.60
91DCP-179B	7b	G	G	0.00	0.00	1.77	20.27	36.60	0.00	14.76	14.95	9.77	1.51	0.31	0.06	62.42	41.31
91DCP-130	7b	MG	MG	4.37	0.00	9.22	5.81	14.44	0.00	24.35	36.23	0.00	2.72	2.60	0.25	49.01	65.91
91DCP-094	8	GA	GA	0.00	0.00	5.44	17.12	56.47	4.52	9.90	0.00	5.63	0.50	0.30	0.13	71.45	16.32
91DCP-095	8	GA	GA	0.00	0.00	3.45	18.28	53.07	6.92	7.01	0.00	10.08	0.80	0.32	0.08	70.95	18.20
91DCP-096	8	GA	GA	0.00	0.00	9.80	12.05	56.66	7.94	7.03	0.00	5.84	0.44	0.16	0.08	72.18	13.47
91DCP-097	8	GA	GA	0.00	0.00	8.03	15.67	50.14	8.27	10.50	0.00	6.43	0.55	0.34	0.06	67.90	17.83
91DCP-104	8	GA	GA	0.00	0.00	5.45	32.93	44.44	6.10	9.32	0.00	1.05	0.34	0.25	0.14	53.66	10.95

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
91DCP-105	8	GA	GA	0.00	0.00	4.89	24.72	52.03	0.28	5.83	0.00	11.34	0.63	0.22	0.06	63.74	18.02
90DCP-038	8	yG	AG	0.25	0.00	2.80	22.49	53.09	0.00	0.36	19.86	0.00	0.83	0.25	0.07	67.74	21.30
90DCP-039	8	G	AG	2.77	0.00	2.30	17.16	49.05	0.00	7.87	18.95	0.00	1.00	0.82	0.08	71.60	28.63
90DCP-040	8	G	AG	2.09	0.00	2.08	17.31	50.71	0.00	7.79	18.85	0.00	0.80	0.33	0.05	72.34	27.77
90DCP-041	8	G	AG	0.00	0.00	3.26	21.27	47.02	0.00	3.14	20.84	2.75	1.17	0.47	0.09	65.72	28.37
90DCP-071	8	G	AG	0.00	0.00	5.05	20.25	49.46	0.00	5.23	18.75	0.04	0.89	0.29	0.04	66.16	25.20
90DCP-072	8	LG	AG	0.00	0.00	3.24	15.57	50.21	0.00	7.74	21.18	0.83	0.94	0.28	0.02	72.75	30.96
90DCP-232	8	G	AG	0.00	0.00	2.58	22.07	47.00	0.00	10.84	11.58	4.50	0.80	0.50	0.13	65.59	28.22
90DCP-265	8	G	AG	0.00	0.00	1.85	19.02	44.51	0.00	14.27	15.52	3.51	0.85	0.37	0.11	68.08	34.52
90DCP-266	8	LG	AG	0.00	0.00	3.23	22.97	47.72	0.00	10.53	10.26	4.00	0.80	0.38	0.11	64.56	25.98
90DCP-269	8	G	AG	0.00	0.00	3.13	19.49	45.58	0.00	10.69	18.19	1.42	1.00	0.41	0.09	66.84	31.71
90DCP-270	8	LG	AG	0.00	0.00	3.00	24.92	45.91	0.00	9.54	7.16	8.05	0.88	0.43	0.11	62.18	26.05
90DCP-398	8	G	AG	0.00	0.00	4.40	22.43	41.54	0.00	9.23	13.51	7.29	0.98	0.50	0.13	60.76	31.51
90DCP-415	8	snLG	AG	0.00	0.00	3.83	25.29	44.65	0.00	8.49	12.81	3.18	0.81	0.72	0.21	60.52	26.01
90DCP-416	8	G	AG	0.00	0.00	2.16	20.72	44.95	0.00	9.88	18.52	2.20	1.04	0.40	0.13	66.27	32.04
90DCP-418	8	G	AG	0.00	0.00	2.54	19.17	45.39	0.00	8.82	11.03	11.36	1.16	0.43	0.11	67.64	32.79
90DCP-424	8	G	AG	0.00	0.00	2.96	23.57	42.97	0.00	8.09	8.81	11.82	1.08	0.57	0.13	61.82	30.37
91DCP-092	8	AG	AG	0.00	0.00	2.73	20.15	50.43	0.00	4.94	4.44	16.04	0.89	0.28	0.10	68.79	26.59
91DCP-093	8	AG	AG	0.00	0.00	2.33	20.62	52.78	0.00	5.24	4.87	13.03	0.78	0.25	0.10	69.70	24.17
91DCP-098	8	AG	AG	0.00	0.00	2.26	23.75	48.61	0.00	10.11	4.67	9.51	0.75	0.29	0.06	65.14	25.32
91DCP-100	8	AG	AG	0.00	0.00	5.87	22.80	45.94	3.57	4.99	0.00	15.56	0.82	0.35	0.10	61.57	21.72
91DCP-101	8	AG	AG	0.00	0.00	4.11	20.93	38.86	0.00	13.81	6.23	14.07	1.07	0.78	0.14	60.81	35.96
91DCP-102	8	AG	AG	0.00	0.00	2.71	23.40	50.32	0.00	7.64	0.73	14.16	0.76	0.22	0.06	65.85	23.52
91DCP-103	8	AG	AG	0.00	0.00	3.90	24.81	42.99	7.50	8.41	0.00	11.26	0.75	0.32	0.06	59.96	20.74
91DCP-109	8	AG	AG	18.99	0.00	0.38	35.14	21.03	0.00	20.76	1.93	0.00	0.72	0.82	0.23	37.19	24.23
90DCP-070	8	G	G	0.00	0.00	1.29	11.18	28.36	0.00	6.52	27.12	23.16	1.96	0.36	0.06	69.45	59.11
90DCP-231	8	G	G	0.00	0.00	2.19	11.47	36.13	0.00	12.30	18.25	17.69	1.57	0.34	0.07	72.56	50.14
90DCP-262	8	G	G	3.03	0.00	4.50	18.91	31.00	0.00	14.97	24.73	0.00	1.42	1.22	0.22	56.98	42.35
90DCP-267	8	LG	G	1.74	0.00	9.49	26.95	21.54	0.00	16.12	20.79	0.00	1.59	1.51	0.26	37.15	40.02
90DCP-268	8	G	G	0.01	0.00	2.30	18.49	34.05	0.00	12.46	30.79	0.00	1.28	0.49	0.13	62.09	45.01
90DCP-397	8	G	G	0.00	0.00	3.78	6.30	29.05	0.00	11.35	22.60	24.66	1.88	0.29	0.09	74.25	60.78
90DCP-399	8	G	G	0.00	0.00	2.94	13.95	38.86	0.00	9.71	20.14	12.45	1.48	0.36	0.11	69.71	44.15
90DCP-417	8	G	G	0.00	0.00	3.34	18.09	39.67	0.00	10.78	16.29	9.59	1.45	0.63	0.15	64.92	38.75
91DCP-099	8	G	G	0.00	0.00	4.10	16.61	41.43	0.00	5.51	6.22	24.55	1.37	0.18	0.04	66.68	37.83
91DCP-106	8	G	G	0.00	0.00	3.76	22.56	36.35	0.00	17.89	6.01	11.39	1.03	0.88	0.13	58.00	37.20
91DCP-107	8	G	G	24.83	0.00	0.61	13.02	18.94	0.00	17.03	23.31	0.00	1.37	0.72	0.16	58.14	42.43
91DCP-108	8	G	G	28.18	0.00	0.76	19.20	21.11	0.00	12.32	16.29	0.00	1.13	0.80	0.21	51.41	30.54
90DCP-053	9	G	GA	0.09	0.00	3.47	22.81	55.23	0.00	3.60	13.41	0.00	0.61	0.64	0.15	67.76	18.25
90DCP-054	9	G	GA	0.00	0.00	3.38	24.69	54.20	0.00	4.23	9.60	2.51	0.61	0.65	0.13	65.88	17.60
90DCP-413	9	G	GA	0.00	0.00	3.11	27.89	49.91	0.00	7.31	3.41	6.59	0.64	0.96	0.19	61.69	18.90
90DCP-419	9	snLG	GA	0.00	0.00	6.12	30.26	45.88	0.16	6.72	0.00	9.39	0.70	0.57	0.21	55.78	17.37
90DCP-422	9	LG	GA	0.00	0.00	3.70	27.87	50.77	0.18	5.56	0.00	10.77	0.60	0.42	0.13	61.66	17.36
91DCP-079A	9	GA	GA	0.00	0.00	2.67	22.77	56.56	0.41	0.80	0.00	15.74	0.73	0.24	0.08	68.98	17.51
91DCP-079B	9	GA	GA	0.00	0.00	9.58	17.31	57.72	4.41	2.72	0.00	7.43	0.45	0.29	0.09	68.21	10.89
91DCP-080	9	GA	GA	0.00	0.00	3.17	22.33	55.51	2.62	4.04	0.00	11.53	0.57	0.17	0.06	68.51	16.31
91DCP-082	9	GA	GA	0.00	0.00	3.71	16.52	53.87	9.40	12.82	0.00	2.84	0.58	0.21	0.05	72.70	16.44
90DCP-035	9	G	AG	3.29	0.00	7.56	20.58	34.61	0.00	6.96	24.43	0.00	1.33	1.09	0.15	55.16	33.81

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-042	9	G	AG	0.91	0.00	2.59	20.12	50.63	0.00	7.65	16.08	0.00	1.03	0.85	0.15	69.03	25.61
90DCP-052	9	yMG	AG	0.51	0.00	3.56	20.61	51.85	0.00	6.75	15.27	0.00	0.75	0.57	0.14	68.21	23.34
90DCP-056	9	G	AG	0.00	0.00	2.80	18.33	48.28	0.00	6.26	21.60	1.36	0.94	0.38	0.05	69.56	30.54
90DCP-057	9	G	AG	0.00	0.00	4.25	20.46	46.51	0.00	6.38	15.40	5.68	0.83	0.45	0.05	65.30	28.73
90DCP-230	9	G	AG	0.00	0.00	1.80	20.42	41.47	0.00	9.12	19.39	5.69	1.16	0.72	0.24	65.12	36.07
90DCP-242	9	G	AG	0.00	0.00	3.79	20.92	40.45	0.00	4.13	11.89	16.99	1.29	0.44	0.11	62.08	34.74
90DCP-387	9	LG	AG	0.00	0.00	4.19	24.30	46.11	0.00	6.94	13.95	3.23	0.77	0.38	0.13	61.81	25.26
90DCP-388	9	G	AG	0.00	0.00	3.49	21.46	39.65	0.00	9.97	12.61	11.11	0.99	0.61	0.11	61.38	35.29
90DCP-389	9	G	AG	0.00	0.00	2.28	22.56	43.00	0.00	8.56	12.41	9.54	0.97	0.54	0.15	63.38	32.01
90DCP-390	9	LG	AG	0.00	0.00	3.72	26.99	43.35	0.00	8.01	8.47	7.93	0.81	0.55	0.15	58.53	25.78
90DCP-391	9	LG	AG	0.00	0.00	2.63	21.18	54.22	0.00	6.80	6.39	7.42	0.67	0.56	0.13	69.48	21.84
90DCP-409	9	OG	AG	0.00	0.00	1.70	19.26	46.90	0.00	8.14	14.08	8.61	0.93	0.30	0.09	69.12	32.06
90DCP-411	9	OG	AG	0.00	0.00	2.59	18.59	46.66	0.00	7.54	12.37	10.69	1.01	0.41	0.13	68.78	32.03
90DCP-412	9	LG	AG	0.00	0.00	1.80	21.09	47.53	0.00	6.51	7.32	14.13	1.06	0.43	0.13	67.49	29.45
90DCP-414	9	LG	AG	0.00	0.00	2.82	21.44	45.50	0.00	9.20	14.77	4.44	0.97	0.68	0.19	65.22	30.05
90DCP-420	9	LG	AG	0.00	0.00	8.24	26.83	41.71	0.29	10.88	0.00	10.65	0.74	0.54	0.13	54.33	22.80
90DCP-421	9	G	AG	0.00	0.00	1.98	24.14	50.19	0.00	6.99	8.52	6.77	0.78	0.51	0.13	65.77	23.55
90DCP-425	9	LG	AG	0.00	0.00	4.07	22.06	47.71	0.00	7.62	11.03	5.61	0.96	0.79	0.15	64.61	26.01
90DCP-426	9	LG	AG	0.00	0.00	2.18	19.66	43.26	0.00	9.40	17.92	5.87	1.09	0.50	0.13	66.45	34.77
90DCP-427	9	G	AG	0.00	0.00	2.23	22.04	50.26	0.00	7.50	12.47	3.93	0.88	0.57	0.13	67.44	25.34
90DCP-428	9	G	AG	0.00	0.00	2.76	22.83	47.38	0.00	7.40	14.55	3.34	0.91	0.64	0.19	64.93	26.84
91DCP-047	9	AG	AG	0.00	0.00	7.71	29.99	37.29	0.00	3.58	1.87	17.84	1.14	0.35	0.12	49.72	24.89
91DCP-048	9	AG	AG	0.00	0.00	6.46	27.11	40.75	0.00	5.16	1.29	17.69	1.04	0.37	0.12	54.84	25.56
91DCP-049	9	AG	AG	0.00	0.00	3.34	29.54	43.69	0.00	9.44	0.34	12.42	0.79	0.34	0.11	57.06	23.33
91DCP-050	9	AG	AG	0.00	0.00	1.97	21.79	44.10	0.00	8.99	13.47	8.06	1.10	0.40	0.09	64.98	32.04
91DCP-052	9	AG	AG	0.00	0.00	2.58	23.76	45.64	0.00	8.65	5.31	11.77	1.03	1.09	0.16	63.40	27.85
91DCP-053	9	AG	AG	0.00	0.00	2.95	28.52	45.19	0.00	9.38	4.57	7.69	0.86	0.71	0.14	58.95	23.21
91DCP-054	9	AG	AG	0.00	0.00	1.90	26.24	42.86	0.00	10.02	10.71	6.96	0.97	0.27	0.07	60.38	28.93
91DCP-055	9	AG	AG	0.00	0.00	1.22	26.43	44.99	0.00	9.38	5.61	10.77	0.92	0.51	0.16	61.94	27.19
91DCP-068	9	AG	AG	0.00	0.00	3.66	24.70	40.10	0.00	11.74	12.00	6.02	1.08	0.57	0.11	58.58	31.43
91DCP-070	9	AG	AG	0.00	0.00	3.35	28.05	42.81	0.00	9.14	13.63	0.88	0.92	0.93	0.28	57.68	25.50
91DCP-071	9	AG	AG	0.00	0.00	2.41	21.84	40.05	0.00	9.95	16.80	7.01	1.29	0.54	0.11	62.28	35.59
91DCP-072	9	AG	AG	0.00	0.00	2.28	25.30	45.21	0.00	9.77	14.83	0.77	0.90	0.75	0.18	62.11	27.02
91DCP-075	9	AG	AG	0.00	0.00	3.29	27.48	39.46	0.00	13.05	7.20	7.74	1.07	0.55	0.15	56.19	29.61
91DCP-076	9	AG	AG	0.00	0.00	5.47	27.99	42.11	0.00	12.67	2.17	7.60	0.84	0.90	0.26	55.72	24.17
91DCP-078	9	AG	AG	0.00	0.00	6.35	26.15	41.33	0.00	11.97	7.10	5.05	0.93	0.76	0.37	55.99	25.81
91DCP-081	9	AG	AG	0.00	0.00	2.45	7.11	54.29	9.03	25.21	0.00	1.08	0.57	0.20	0.06	85.03	27.06
91DCP-083	9	AG	AG	0.00	0.00	6.59	23.72	42.90	3.47	11.06	0.00	10.63	0.83	0.70	0.10	58.60	23.22
91DCP-084	9	AG	AG	0.00	0.00	2.85	25.91	47.71	0.00	9.91	2.94	9.43	0.81	0.34	0.09	62.39	23.44
91DCP-085	9	AG	AG	0.00	0.00	2.61	27.66	45.09	0.00	9.86	2.47	10.84	0.89	0.49	0.08	59.83	24.56
91DCP-086	9	AG	AG	0.00	0.00	2.03	28.94	38.79	0.00	11.01	4.18	13.44	0.99	0.48	0.15	55.60	30.09
91DCP-087	9	AG	AG	0.00	0.00	5.15	16.68	51.15	0.00	0.19	0.67	24.98	0.95	0.19	0.04	70.08	26.98
91DCP-088	9	AG	AG	0.00	0.00	5.69	18.78	48.28	0.03	4.77	0.00	21.28	0.89	0.21	0.07	66.37	27.15
91DCP-089	9	AG	AG	0.00	0.00	6.14	17.62	51.49	3.93	2.97	0.00	16.72	0.76	0.26	0.11	68.42	20.71
91DCP-090	9	AG	AG	0.00	0.00	2.47	21.93	50.53	0.17	7.22	0.00	16.32	0.82	0.42	0.13	67.44	24.78
91DCP-091	9	AG	AG	0.00	0.00	0.98	21.30	55.72	0.00	5.21	1.77	14.06	0.71	0.19	0.06	71.44	21.94
90DCP-036	9	LG	G	3.77	0.00	6.93	18.93	33.98	0.00	7.54	26.16	0.00	1.41	1.09	0.19	56.79	36.20

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-037	9	G	G	5.78	0.00	6.65	20.35	30.58	0.00	8.23	25.51	0.00	1.50	1.21	0.18	53.11	36.46
90DCP-102	9	OG	G	0.00	0.00	1.51	14.84	47.42	0.00	3.44	22.12	9.07	1.16	0.36	0.08	74.36	36.15
90DCP-198	9	G	G	0.00	0.00	2.20	30.70	24.45	0.00	15.06	17.83	6.31	1.74	1.58	0.13	42.63	42.52
90DCP-199	9	G	G	4.51	0.00	3.08	22.94	30.84	0.00	16.84	18.95	0.00	1.54	1.00	0.29	54.24	38.34
90DCP-200	9	OG	G	0.00	0.00	4.29	22.73	35.49	0.00	8.18	25.75	0.95	1.74	0.66	0.20	56.78	37.29
90DCP-201	9	G	G	3.38	0.00	3.53	20.72	27.11	0.00	18.72	22.89	0.00	2.06	1.42	0.18	52.78	45.09
90DCP-202	9	G	G	0.00	0.00	2.79	21.56	26.48	0.00	19.61	20.91	3.87	2.35	2.28	0.16	52.09	49.02
90DCP-229	9	G	G	0.00	0.00	2.59	9.88	35.73	0.00	6.61	21.03	22.24	1.48	0.34	0.09	74.12	51.71
90DCP-410	9	OG	G	0.00	0.00	1.33	17.33	45.33	0.00	8.60	11.14	14.67	1.10	0.38	0.11	70.84	35.90
91DCP-051	9	G	G	0.00	0.00	1.83	19.98	41.28	0.00	11.36	18.39	5.66	1.15	0.26	0.10	65.43	36.82
91DCP-067	9	G	G	0.00	0.00	3.11	20.22	38.89	0.00	8.08	13.84	13.77	1.47	0.49	0.11	62.50	37.66
91DCP-069	9	G	G	0.00	0.00	2.73	18.32	35.55	0.00	8.84	18.01	14.33	1.61	0.50	0.10	62.81	43.29
91DCP-073	9	G	G	0.00	0.00	1.66	21.60	38.08	0.00	12.10	13.62	10.59	1.34	0.90	0.11	62.08	38.54
91DCP-074	9	G	G	0.00	0.00	2.40	12.93	31.36	0.00	10.88	21.20	18.85	1.90	0.36	0.11	67.16	53.20
91DCP-077	9	G	G	0.00	0.00	1.26	20.44	37.51	0.00	11.77	22.26	4.74	1.39	0.50	0.13	63.35	40.66
91DCP-032	10	AG	AG	0.00	0.00	4.12	23.64	36.11	0.00	5.64	3.23	25.02	1.35	0.71	0.17	56.54	35.95
91DCP-033	10	AG	AG	0.00	0.00	2.21	24.47	39.28	0.00	15.90	5.56	10.77	1.02	0.66	0.11	59.55	33.92
91DCP-037	10	AG	AG	0.00	0.00	2.18	22.83	41.79	0.00	8.79	3.80	19.09	1.08	0.37	0.07	62.56	33.13
91DCP-166	10	OAG	AG	0.00	0.00	2.33	22.54	44.72	0.00	7.12	7.98	13.52	1.05	0.59	0.15	64.26	30.27
91DCP-167	10	OAG	AG	0.00	0.00	2.98	21.69	43.35	0.00	7.37	14.76	8.11	1.02	0.55	0.16	63.73	31.82
90DCP-065	10	OG	G	0.00	0.00	1.56	15.42	43.55	0.00	7.49	23.87	6.18	1.24	0.56	0.12	71.95	39.35
90DCP-066	10	OG	G	0.00	0.00	2.27	13.89	38.02	0.00	5.32	17.88	20.58	1.53	0.44	0.06	70.17	45.75
91DCP-035	10	OG	G	0.00	0.00	1.38	13.07	26.52	0.00	6.25	14.36	35.90	2.02	0.41	0.08	64.73	58.96
91DCP-036	10	OG	G	0.00	0.00	1.30	12.33	30.00	0.00	3.71	21.98	28.35	1.84	0.37	0.11	68.77	56.27
91DCP-038	10	OG	G	0.00	0.00	1.03	9.47	24.54	0.00	6.45	17.60	38.62	1.99	0.25	0.04	70.04	64.92
91DCP-039	10	G	G	0.00	0.00	1.50	16.55	34.81	0.00	4.66	21.65	18.95	1.40	0.40	0.07	65.85	47.06
91DCP-040	10	OG	G	0.00	0.00	1.27	15.56	35.30	0.00	4.97	18.25	22.67	1.58	0.31	0.09	67.72	47.78
91DCP-041	10	OG	G	0.00	0.00	1.57	17.71	31.56	0.00	8.36	9.41	29.35	1.56	0.39	0.09	62.07	49.06
91DCP-162	10	OG	G	0.00	0.00	1.32	9.12	28.53	0.00	7.08	31.18	20.20	2.01	0.46	0.12	73.21	60.91
91DCP-163	10	OG	G	0.00	0.00	1.40	12.67	32.39	0.00	2.51	24.25	24.66	1.62	0.38	0.11	69.72	53.44
91DCP-164	10	G	G	0.00	0.00	1.40	14.23	33.45	0.00	0.59	24.12	24.05	1.62	0.43	0.10	68.15	50.82
91DCP-165	10	OG	G	0.00	0.00	1.16	13.02	28.99	0.00	3.39	24.29	27.06	1.69	0.33	0.07	67.15	56.76
91DCP-168	10	OG	G	0.00	0.00	1.14	11.76	28.19	0.00	5.43	29.88	21.27	1.86	0.40	0.08	68.61	58.83
91DCP-169	10	OG	G	0.00	0.00	1.71	12.84	32.15	0.00	3.75	21.47	25.86	1.68	0.41	0.14	68.85	53.17
91DCP-170	10	OG	G	0.00	0.00	1.76	15.70	36.83	0.00	6.89	16.96	20.15	1.33	0.32	0.06	67.84	45.65
91DCP-029	10	MOG	MG	0.00	0.00	0.57	3.19	21.24	0.00	9.92	31.89	30.44	2.44	0.26	0.04	84.95	74.95
91DCP-030	10	MOG	MG	0.00	0.00	0.66	2.90	21.64	0.00	13.13	32.23	26.85	2.05	0.47	0.07	85.88	74.74
91DCP-031	10	MOG	MG	0.00	0.00	0.77	4.05	23.56	0.00	4.20	34.63	30.27	2.05	0.39	0.08	83.03	71.54
91DCP-034	10	MOG	MG	0.00	0.00	1.18	9.71	21.83	0.00	5.55	16.71	42.42	2.25	0.26	0.09	66.73	67.20
91DCP-161	10	MOG	MG	0.00	0.00	0.87	7.97	21.54	0.00	8.24	34.11	24.68	2.21	0.32	0.05	70.91	69.57
90DCP-067	11a	G	GA	0.00	0.00	11.41	31.61	38.84	0.29	7.18	0.00	8.67	0.81	0.92	0.26	47.45	17.58
90DCP-058	11a	G	AG	0.00	0.00	2.54	17.79	45.55	0.00	2.78	19.18	10.54	1.11	0.42	0.08	69.14	34.03
90DCP-059	11a	G	AG	0.34	0.00	3.56	26.20	43.37	0.00	10.84	13.92	0.00	0.92	0.71	0.15	59.31	26.39
90DCP-061	11a	LG	AG	1.71	0.00	6.26	24.74	44.23	0.00	7.13	13.92	0.00	0.89	0.90	0.22	58.79	22.84
90DCP-062	11a	G	AG	1.69	0.00	3.66	21.39	39.64	0.00	11.64	20.05	0.00	1.19	0.61	0.14	61.28	33.48
90DCP-068	11a	G	AG	0.87	0.00	8.55	22.22	36.16	0.00	8.84	21.48	0.00	1.17	0.50	0.21	54.03	31.99
90DCP-069	11a	G	AG	1.63	0.00	4.78	23.49	38.40	0.00	11.71	17.75	0.00	1.16	0.93	0.16	57.60	31.55

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-082	11a	G	AG	1.74	0.00	3.34	21.04	38.27	0.00	13.16	20.28	0.00	1.21	0.80	0.15	61.08	35.46
91DCP-021	11a	AG	AG	0.00	0.00	11.36	23.31	33.37	0.00	12.93	10.42	5.96	1.33	1.09	0.24	49.04	31.72
91DCP-022	11a	AG	AG	0.48	0.00	5.61	23.83	36.62	0.00	12.54	18.32	0.00	1.35	1.01	0.23	55.44	33.23
91DCP-025	11a	AG	AG	0.00	0.00	3.09	33.61	40.31	0.00	7.97	3.62	9.90	1.06	0.35	0.10	52.35	22.89
91DCP-026	11a	AG	AG	0.00	0.00	8.36	25.61	43.12	0.00	7.24	4.83	9.34	0.91	0.50	0.09	55.94	22.82
91DCP-027	11a	AG	AG	0.00	0.00	3.35	24.37	42.53	0.00	10.77	11.48	5.80	1.04	0.50	0.16	60.55	29.59
90DCP-060	11a	MG	G	0.47	0.00	2.74	17.72	37.47	0.00	14.87	24.79	0.00	1.22	0.64	0.08	64.68	41.53
90DCP-083	11a	G	G	3.51	0.00	2.41	15.67	32.62	0.00	20.17	23.22	0.00	1.41	0.81	0.16	64.34	45.63
90DCP-084	11a	G	G	2.53	0.00	3.52	19.01	38.43	0.00	14.04	20.57	0.00	1.22	0.62	0.06	63.04	36.45
90DCP-085	11a	G	G	3.86	0.00	3.30	15.13	34.32	0.00	19.05	22.05	0.00	1.37	0.79	0.14	65.07	43.26
90DCP-086	11a	G	G	2.79	0.00	2.79	22.17	35.80	0.00	12.77	21.45	0.00	1.32	0.78	0.13	58.93	36.32
90DCP-089	11a	G	G	5.42	0.00	2.09	18.22	30.03	0.00	16.33	25.08	0.00	1.56	1.02	0.25	59.66	44.00
90DCP-090	11a	G	G	3.08	0.00	2.68	20.02	34.19	0.00	15.65	21.86	0.00	1.45	0.89	0.17	60.10	39.85
91DCP-019	11a	G	G	0.38	0.00	2.89	18.21	23.29	0.00	23.17	29.07	0.00	1.69	1.10	0.21	52.47	55.02
91DCP-020	11a	G	G	0.00	0.00	2.81	18.17	32.72	0.00	14.79	23.25	5.77	1.71	0.65	0.12	60.93	46.17
91DCP-024	11a	G	G	0.00	0.00	2.46	11.77	32.93	0.00	6.36	22.98	21.02	1.95	0.44	0.10	69.82	52.75
91DCP-028	11a	G	G	0.00	0.00	5.17	20.32	32.89	0.00	21.20	10.65	7.81	1.20	0.65	0.12	56.34	41.50
90DCP-111	11b	A	A	0.00	0.00	12.18	17.98	55.55	4.70	2.84	0.00	6.21	0.46	0.05	0.02	64.82	9.57
90DCP-170	11b	LG	GA	0.00	0.00	6.91	22.38	59.58	0.00	2.93	1.45	5.57	0.49	0.57	0.13	67.04	11.00
90DCP-206	11b	pLG	GA	5.00	0.00	4.35	29.76	40.76	0.00	6.29	11.05	0.00	1.07	1.44	0.28	54.44	19.84
90DCP-110	11b	LG	AG	0.00	0.00	6.01	16.55	42.96	0.00	11.22	17.84	4.29	0.87	0.21	0.04	65.57	34.43
90DCP-112	11b	G	AG	0.00	0.00	3.36	34.12	31.02	0.00	6.45	8.95	14.33	1.18	0.50	0.08	45.29	31.42
90DCP-162	11b	MG	AG	0.00	0.00	12.15	37.65	13.65	0.00	9.47	22.24	0.84	1.96	1.69	0.35	21.51	36.21
90DCP-163	11b	G	AG	0.72	0.00	10.50	40.43	11.62	0.00	16.01	16.72	0.00	1.78	1.76	0.46	18.58	36.27
90DCP-165	11b	G	AG	0.24	0.00	6.81	27.35	35.52	0.00	9.93	17.02	0.00	1.49	1.47	0.18	50.97	29.91
90DCP-171	11b	LG	AG	4.16	0.00	4.20	21.34	40.34	0.00	6.63	21.33	0.00	1.12	0.69	0.20	61.23	29.77
90DCP-178	11b	G	AG	3.50	0.00	2.60	22.42	43.65	0.00	9.75	16.39	0.00	1.04	0.50	0.17	63.57	27.67
90DCP-191	11b	LG	AG	0.00	0.00	8.55	25.25	36.17	0.00	10.79	14.86	1.88	1.47	0.81	0.22	51.69	29.80
90DCP-192	11b	LG	AG	2.69	0.00	8.91	23.55	42.13	0.00	6.35	14.19	0.00	1.08	0.76	0.33	56.48	22.39
90DCP-203	11b	pLG	AG	2.19	0.00	4.30	24.83	39.41	0.00	9.52	17.77	0.00	1.25	0.57	0.17	57.50	29.10
90DCP-204	11b	G	AG	1.84	0.00	3.35	31.82	40.65	0.00	7.96	12.57	0.00	1.14	0.50	0.17	53.61	22.17
90DCP-205	11b	G	AG	1.66	0.00	4.35	26.93	35.93	0.00	10.39	17.93	0.00	1.47	1.11	0.22	53.46	30.90
90DCP-207	11b	G	AG	1.89	0.00	5.00	26.23	40.76	0.00	11.12	12.04	0.00	1.28	1.45	0.22	56.61	25.90
90DCP-221	11b	LG	AG	0.00	0.00	9.95	23.90	35.29	0.00	9.25	11.25	8.82	1.02	0.43	0.09	51.05	30.77
90DCP-226	11b	G	AG	0.00	0.00	8.20	26.04	33.67	0.00	8.92	17.14	1.53	1.98	2.27	0.24	49.58	31.84
90DCP-113	11b	G	G	1.35	0.00	4.74	26.38	26.04	0.00	16.66	22.09	0.00	1.43	1.08	0.22	45.55	41.27
90DCP-115	11b	G	G	3.75	0.00	5.50	19.94	29.31	0.00	17.33	21.70	0.00	1.36	0.93	0.20	53.53	41.30
90DCP-116	11b	snG	G	2.38	0.00	7.17	19.77	28.92	0.00	17.69	21.12	0.00	1.68	1.07	0.20	51.77	41.57
90DCP-132	11b	G	G	0.60	0.00	15.78	19.40	25.69	0.00	12.55	23.58	0.00	1.42	0.82	0.17	42.21	38.37
90DCP-134	11b	G	G	3.71	0.00	7.37	19.53	26.36	0.00	15.84	23.59	0.00	1.83	1.61	0.17	49.49	42.86
90DCP-135	11b	G	G	0.89	0.00	1.83	26.57	25.99	0.00	16.53	24.86	0.00	1.82	1.34	0.18	47.79	44.55
90DCP-166	11b	LG	G	0.00	0.00	3.74	18.86	41.05	0.00	11.70	23.16	0.41	0.91	0.18	0.00	64.49	36.36
90DCP-169	11b	LG	G	13.69	0.00	4.83	17.87	28.12	0.00	9.56	23.22	0.00	1.21	1.36	0.16	55.33	35.34
90DCP-173	11b	MG	G	4.48	0.00	2.98	17.56	32.74	0.00	15.43	24.22	0.00	1.51	0.89	0.20	61.44	42.04
90DCP-175	11b	G	G	1.29	0.00	8.34	20.73	32.18	0.00	8.51	26.68	0.00	1.41	0.73	0.13	52.53	37.33
90DCP-177	11b	G	G	4.58	0.00	3.62	17.25	36.35	0.00	15.01	21.23	0.00	1.27	0.51	0.18	63.53	38.02
90DCP-193	11b	LG	G	0.94	0.00	6.03	21.16	33.23	0.00	14.01	20.67	0.00	1.87	1.94	0.16	55.00	38.48

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-260	12	G	AG	0.00	0.00	2.39	22.79	39.35	0.00	11.66	20.82	0.91	1.36	0.56	0.15	60.98	35.32
91DCP-009	12	AG	AG	0.34	0.00	3.51	26.52	40.83	0.00	12.02	14.54	0.00	1.03	1.00	0.21	57.61	28.59
91DCP-011	12	AG	AG	1.72	0.00	3.12	24.43	40.65	0.00	11.27	16.74	0.00	1.12	0.76	0.19	59.61	29.89
91DCP-012	12	AG	AG	0.00	0.00	2.88	26.02	39.25	0.00	11.15	17.94	1.18	1.08	0.37	0.13	57.60	31.72
91DCP-013	12	AG	AG	0.00	0.00	2.42	26.32	37.94	0.00	14.97	12.73	3.89	1.10	0.46	0.15	56.90	33.16
90DCP-087	12	DG	G	2.70	0.00	4.37	16.53	30.38	0.00	20.58	22.70	0.00	1.51	1.13	0.11	59.25	45.92
90DCP-088	12	DG	G	2.48	0.00	4.96	16.20	28.68	0.00	22.76	22.32	0.00	1.45	0.97	0.18	57.55	47.50
90DCP-104	12	DG	G	0.00	0.00	3.79	31.93	22.25	0.00	16.05	13.95	9.75	1.55	0.60	0.14	38.39	41.89
90DCP-114	12	DG	G	5.23	0.00	7.58	20.21	27.70	0.00	13.36	22.51	0.00	1.78	1.37	0.27	49.92	39.01
90DCP-117	12	DG	G	1.60	0.00	7.50	25.82	22.49	0.00	16.43	22.79	0.00	1.67	1.45	0.25	40.29	42.34
90DCP-133	12	DG	G	2.72	0.00	7.55	19.42	27.10	0.00	14.74	25.80	0.00	1.58	0.95	0.14	50.12	43.06
90DCP-160	12	pG	G	0.00	0.00	8.92	33.26	19.26	0.00	15.06	18.78	1.25	1.76	1.48	0.24	31.34	38.33
90DCP-161	12	DG	G	0.30	0.00	14.43	26.10	20.98	0.00	16.60	18.25	0.00	1.46	1.59	0.28	34.10	37.90
90DCP-172	12	MG	G	3.49	0.00	2.97	18.68	32.83	0.00	15.62	24.32	0.00	1.33	0.59	0.17	60.26	41.86
90DCP-174	12	DG	G	5.88	0.00	2.81	19.19	29.87	0.00	18.95	21.00	0.00	1.32	0.75	0.24	57.60	42.02
90DCP-176	12	DG	G	3.73	0.00	3.67	15.23	28.96	0.00	23.27	22.76	0.00	1.39	0.84	0.15	60.51	48.25
90DCP-197	12	DG	G	5.13	0.00	5.95	17.22	30.49	0.00	13.19	25.01	0.00	1.62	1.12	0.27	56.82	40.94
90DCP-250	12	G	G	0.00	0.00	3.85	20.64	35.95	0.00	16.29	19.42	1.95	1.28	0.51	0.11	59.48	39.45
90DCP-251	12	G	G	3.00	0.00	2.18	16.77	35.04	0.00	16.79	24.08	0.00	1.37	0.59	0.17	64.90	42.83
90DCP-252	12	pG	G	0.85	0.00	4.59	15.80	30.03	0.00	20.59	25.93	0.00	1.40	0.71	0.11	59.56	48.62
91DCP-005	12	G	G	0.00	0.00	3.59	22.58	30.37	0.00	20.74	19.56	1.09	1.27	0.61	0.18	53.71	43.27
91DCP-006	12	G	G	0.83	0.00	2.99	20.18	35.60	0.00	15.15	23.21	0.00	1.30	0.58	0.14	60.57	40.25
91DCP-007	12	G	G	0.00	0.00	3.14	21.25	27.64	0.00	21.29	23.93	0.15	1.54	0.93	0.13	53.13	47.84
91DCP-008	12	G	G	0.08	0.00	2.99	20.70	27.33	0.00	21.67	24.88	0.00	1.44	0.75	0.17	53.56	48.74
91DCP-010	12	G	G	0.93	0.00	3.52	21.98	35.07	0.00	15.09	21.17	0.00	1.30	0.76	0.18	57.90	38.33
91DCP-015	12	G	G	0.00	0.00	2.47	21.95	31.12	0.00	20.76	18.22	2.74	1.54	1.02	0.17	56.04	44.29
91DCP-016	12	G	G	0.00	0.00	2.58	23.80	33.78	0.00	18.17	19.25	0.47	1.24	0.56	0.16	56.16	39.69
91DCP-017	12	G	G	1.89	0.00	3.09	19.30	28.57	0.00	15.23	26.00	0.00	2.27	3.34	0.31	56.06	46.84
91DCP-018	12	MG	MG	0.00	0.00	0.23	2.17	17.14	0.00	20.64	43.88	13.26	2.32	0.29	0.06	87.72	80.40
90DCP-123	13	G	AG	0.00	0.00	14.90	22.60	27.74	0.00	12.32	8.36	12.28	1.06	0.61	0.12	42.52	34.63
90DCP-124	13	G	AG	0.00	0.00	9.21	42.14	11.22	0.00	12.47	18.42	2.31	1.96	1.88	0.39	17.93	37.05
90DCP-127	13	G	AG	0.00	0.00	14.79	37.92	16.94	0.00	4.80	15.35	6.72	1.76	1.41	0.32	24.32	30.04
90DCP-157	13	G	AG	0.00	0.00	6.60	40.31	16.37	0.00	15.50	10.07	7.41	1.80	1.63	0.31	25.87	36.42
91DCP-002	13	AG	AG	0.00	0.00	4.81	36.59	34.66	0.00	4.91	6.06	10.85	1.13	0.81	0.18	45.57	23.76
90DCP-003	13	AG	AG	1.58	0.00	3.46	25.77	40.40	0.00	3.77	22.90	0.00	1.18	0.70	0.23	58.02	28.55
90DCP-091	13	G	G	3.70	0.00	2.78	17.30	34.59	0.00	16.93	22.28	0.00	1.41	0.85	0.16	63.27	41.47
90DCP-093	13	G	G	4.72	0.00	1.84	19.43	35.90	0.00	13.20	22.49	0.00	1.39	0.85	0.18	62.79	37.94
90DCP-094	13	G	G	3.62	0.00	2.78	20.25	36.66	0.00	13.55	20.79	0.00	1.30	0.87	0.17	61.41	36.51
90DCP-095	13	G	G	2.25	0.00	3.50	16.75	31.75	0.00	20.83	22.58	0.00	1.48	0.75	0.10	61.05	45.64
90DCP-096	13	G	G	3.78	0.00	3.55	21.23	34.81	0.00	15.01	19.06	0.00	1.30	1.05	0.23	58.41	36.41
90DCP-121	13	G	G	0.00	0.00	9.70	33.60	17.90	0.00	16.29	13.36	5.22	1.88	1.72	0.33	29.25	38.47
90DCP-122	13	G	G	14.44	7.24	8.62	30.21	4.42	0.00	0.00	30.97	0.00	1.73	1.93	0.43	10.23	34.63
90DCP-126	13	G	G	8.44	4.22	13.19	33.07	6.80	0.00	0.00	29.68	0.00	2.22	1.92	0.45	12.82	33.82
90DCP-128	13	DG	G	3.89	0.00	6.11	20.94	25.67	0.00	16.60	22.38	0.00	2.11	2.09	0.22	48.70	43.17
90DCP-129	13	G	G	2.61	0.00	6.88	27.43	22.33	0.00	14.98	21.80	0.00	1.93	1.67	0.37	39.42	40.37
90DCP-130	13	G	G	1.40	0.00	6.03	23.92	26.72	0.00	16.29	23.02	0.00	1.53	0.92	0.17	47.15	41.75
90DCP-141	13	G	G	4.95	0.00	3.20	15.53	31.73	0.00	16.44	25.25	0.00	1.61	1.13	0.16	62.88	44.43

APPENDIX 1, Part D (continued)

SAMPLE#	UNIT	NAME 1	NAME 2	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-142	13	G	G	4.84	0.00	3.29	15.64	31.63	0.00	16.65	25.03	0.00	1.62	1.13	0.18	62.56	44.42
90DCP-150	13	G	G	2.80	0.00	6.13	38.24	15.73	0.00	6.10	26.98	0.00	1.96	1.66	0.40	26.17	36.70
90DCP-151	13	G	G	0.00	0.00	2.93	31.17	20.92	1.43	30.05	0.00	10.12	1.95	1.19	0.24	38.02	43.31
90DCP-153	13	G	G	6.22	5.66	13.07	29.89	7.91	0.00	0.00	33.08	0.00	2.11	1.80	0.25	15.55	36.99
90DCP-154	13	G	G	13.74	6.52	14.18	31.80	2.35	0.00	0.00	28.20	0.00	1.75	1.18	0.27	4.87	31.14
90DCP-156	13	G	G	0.67	0.00	15.20	19.14	22.44	0.00	13.92	25.07	0.00	1.84	1.52	0.20	39.52	42.35
90DCP-188	13	G	G	11.55	8.40	6.66	27.42	4.84	0.00	0.00	36.12	0.00	2.61	1.92	0.48	12.43	40.65
90DCP-189	13	MS	G	5.33	5.55	16.79	33.47	3.67	0.00	0.00	30.25	0.00	2.35	2.12	0.47	6.80	34.72
90DCP-195	13	G	G	3.48	0.00	3.13	21.11	30.11	0.00	16.12	22.30	0.00	1.69	1.71	0.34	55.39	41.83
90DCP-253	13	MG	G	2.27	0.00	2.74	16.86	24.57	0.00	26.46	24.28	0.00	1.61	0.99	0.22	55.62	53.34
90DCP-254	13	G	G	1.31	0.00	3.93	20.35	37.87	0.00	11.83	22.23	0.00	1.36	0.93	0.19	60.93	36.34
90DCP-255	13	G	G	1.81	0.00	3.74	19.62	30.08	0.00	19.16	23.11	0.00	1.48	0.84	0.17	56.29	44.59
90DCP-256	13	G	G	2.15	0.00	3.11	15.96	28.56	0.00	18.87	28.68	0.00	1.66	0.85	0.15	59.95	50.07
91DCP-001	13	G	G	1.12	0.00	2.49	16.82	34.18	0.00	15.85	27.10	0.00	1.50	0.75	0.19	63.90	45.19

APPENDIX 2. Whole-rock geochemistry of the Border Zone, East Bull Lake intrusion.
Part A. Reference information. See notes for Appendices for explanation.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	DEPTH(m)	UTM-EAST	UTM-NORTH
90DCP-049	WEBLI	Moon Lk.	4	Mafic Vein		407890	5141600
90DCP-237	WEBLI	Bull Lk.	4	Mafic Vein		406160	5143970
90DCP-287	WEBLI	Moon Lk.	4	Mafic Vein		407990	5141610
90DCP-289	WEBLI	Moon Lk.	4	Mafic Vein		407860	5141570
90DCP-362	WEBLI	Moon Lk.	4	Mafic Vein		408300	5141400
90DCP-365	WEBLI	Moon Lk.	4	Mafic Vein		408180	5141440
90DCP-373	WEBLI	Moon Lk.	4	Mafic Vein		407630	5141440
90DCP-406	WEBLI	Parisien Lk.	4	Mafic Vein		408990	5141650
91DCP-172	WEBLI	DDH#EBL2	4	Mafic Vein	790.50		
91DCP-173	WEBLI	DDH#EBL2	4	Mafic Vein	794.80		
91DCP-175	WEBLI	DDH#EBL2	4	Mafic Vein	804.87		
91DCP-176	WEBLI	DDH#EBL2	4	Mafic Vein	807.65		
91DCP-177	WEBLI	DDH#EBL2	4	Mafic Vein	812.12		
91DCP-178	WEBLI	DDH#EBL2	4	Mafic Vein	813.30		
90DCP-075	WEBLI	Moon Lk.	4	Hybrid		407630	5144380
90DCP-077	WEBLI	Moon Lk.	4	Hybrid		407520	5144260
90DCP-078	WEBLI	Moon Lk.	4	Hybrid		407530	5144260
90DCP-375	WEBLI	Moon Lk.	4	Hybrid		407450	5141330
90DCP-379	WEBLI	Moon Lk.	4	Hybrid		408660	5141820
90DCP-383	WEBLI	Moon Lk.	4	Hybrid		408210	5141870
90DCP-402	WEBLI	Parisien Lk.	4	Hybrid		409070	5141550
91DCP-171	WEBLI	DDH#EBL2	4	Hybrid	786.85		
90DCP-076	WEBLI	Moon Lk.	4	Granitoid		407630	5144380
90DCP-271	WEBLI	Moon Lk.	4	Granitoid		408170	5141240
90DCP-368	WEBLI	Moon Lk.	4	Granitoid		408160	5141810
90DCP-403	WEBLI	Parisien Lk.	4	Granitoid		409070	5141550
91DCP-148	WEBLI	DDH#EBL1	4	Granitoid	777.71		
91DCP-150	WEBLI	DDH#EBL1	4	Granitoid	794.40		
91DCP-151	WEBLI	DDH#EBL1	4	Granitoid	796.57		
91DCP-153	WEBLI	DDH#EBL1	4	Granitoid	801.25		
91DCP-154	WEBLI	DDH#EBL1	4	Granitoid	804.02		
91DCP-156	WEBLI	DDH#EBL1	4	Granitoid	813.33		
91DCP-158	WEBLI	DDH#EBL1	4	Granitoid	820.20		
91DCP-174	WEBLI	DDH#EBL2	4	Granitoid	798.08		

APPENDIX 2. Whole-rock geochemistry of the Border Zone, East Bull Lake intrusion. Part B. Major element geochemistry.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	TYPE	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	TOTAL	Mg#	CO2
90DCP-049	4	Mafic Vein	50.78	0.53	20.42	7.73	0.11	5.22	11.49	2.07	0.52	0.05	0.80	99.72	57.20	0.03
90DCP-237	4	Mafic Vein	50.71	0.12	22.25	4.99	0.09	4.54	11.63	2.52	0.45	0.02	1.60	98.92	64.31	0.39
90DCP-287	4	Mafic Vein	49.47	0.21	16.38	9.08	0.17	8.10	10.33	2.11	0.45	0.02	2.40	98.71	63.87	0.02
90DCP-289	4	Mafic Vein	49.44	0.26	15.98	11.38	0.16	8.31	7.87	1.80	0.65	0.02	2.60	98.47	59.11	0.00
90DCP-362	4	Mafic Vein	52.97	0.29	19.76	7.48	0.14	5.24	6.97	3.44	0.71	0.19	3.10	100.29	58.13	0.05
90DCP-365	4	Mafic Vein	53.51	0.25	16.98	7.34	0.15	5.80	8.30	3.61	1.16	0.46	2.50	100.05	61.00	0.52
90DCP-373	4	Mafic Vein	49.37	0.11	18.75	8.10	0.13	8.80	9.44	2.03	0.78	0.02	2.50	100.03	68.29	0.04
90DCP-406	4	Mafic Vein	49.99	0.12	19.57	6.65	0.12	7.91	10.00	2.44	0.27	0.03	2.46	99.56	70.20	0.04
91DCP-172	4	Mafic Vein	50.59	0.10	16.50	9.24	0.16	8.95	9.87	1.86	0.58	0.02	2.48	100.35	65.74	
91DCP-173	4	Mafic Vein	50.84	0.17	15.71	9.56	0.16	8.35	10.33	2.03	0.55	0.02	2.85	100.56	63.37	
91DCP-175	4	Mafic Vein	52.71	0.27	16.02	8.01	0.13	7.57	8.91	2.69	0.66	0.02	2.57	99.56	65.18	
91DCP-176	4	Mafic Vein	55.32	0.24	16.07	7.65	0.11	6.27	7.95	3.11	0.73	0.04	2.81	100.31	61.90	
91DCP-177	4	Mafic Vein	51.03	0.42	16.46	9.57	0.16	7.28	10.01	2.89	0.85	0.03	1.91	100.61	60.10	
91DCP-178	4	Mafic Vein	53.19	0.41	15.45	9.70	0.15	6.41	9.31	2.26	0.97	0.04	2.18	100.06	56.69	
90DCP-075	4	Hybrid	61.20	0.19	18.66	4.84	0.08	2.26	5.11	4.68	1.02	0.05	1.50	99.60	48.07	0.11
90DCP-077	4	Hybrid	66.87	0.41	15.52	4.40	0.07	1.20	4.03	3.97	1.05	0.14	1.10	98.76	35.10	0.08
90DCP-078	4	Hybrid	60.47	0.43	19.20	4.84	0.08	1.66	5.29	4.98	1.28	0.18	1.00	99.41	40.48	0.08
90DCP-375	4	Hybrid	57.12	0.25	17.72	7.45	0.13	5.23	6.05	2.90	0.67	0.06	2.50	100.07	58.18	0.04
90DCP-379	4	Hybrid	64.69	0.11	19.35	2.31	0.04	1.07	5.01	4.74	0.43	0.02	1.10	98.87	47.86	0.11
90DCP-383	4	Hybrid	56.93	1.74	11.46	10.71	0.16	3.68	13.30	0.20	0.11	0.29	1.20	99.79	40.48	0.04
90DCP-402	4	Hybrid	56.14	0.39	18.30	7.55	0.11	3.78	6.55	3.02	1.18	0.16	2.10	99.27	49.81	0.07
91DCP-171	4	Hybrid	57.13	0.21	22.28	3.34	0.04	1.53	9.42	4.25	0.67	0.06	1.76	100.71	47.58	
90DCP-076	4	Granitoid	65.31	0.04	18.27	3.04	0.05	0.87	4.10	5.94	1.06	0.03	1.10	99.80	36.26	0.10
90DCP-271	4	Granitoid	72.99	0.02	15.12	0.72	0.01	0.05	1.46	5.77	2.26	<0.01	0.40	98.81	12.51	0.05
90DCP-368	4	Granitoid	65.12	0.08	19.64	1.97	0.03	1.00	4.57	5.37	0.60	0.04	0.90	99.35	50.16	0.05
90DCP-403	4	Granitoid	72.68	0.12	15.27	1.39	0.01	0.17	3.01	5.71	0.32	0.02	0.30	98.99	19.43	0.10
91DCP-148	4	Granitoid	66.45	0.11	17.63	1.42	0.02	0.32	3.16	7.41	0.68	0.03	2.13	99.35	31.10	
91DCP-150	4	Granitoid	60.37	0.23	19.39	3.84	0.05	0.73	6.44	6.69	0.65	0.08	1.34	99.82	27.41	
91DCP-151	4	Granitoid	67.54	0.06	18.09	1.05	0.01	0.13	1.84	9.30	0.55	0.03	0.68	99.27	20.15	
91DCP-153	4	Granitoid	66.28	0.09	18.71	1.09	0.02	0.28	1.86	7.85	2.57	0.04	1.29	100.09	33.84	
91DCP-154	4	Granitoid	69.85	0.05	17.07	0.49	0.01	0.12	1.22	7.50	2.21	0.05	0.81	99.36	31.65	
91DCP-156	4	Granitoid	70.03	0.15	14.91	2.76	0.04	0.82	2.17	6.54	0.80	0.05	1.43	99.71	37.06	
91DCP-158	4	Granitoid	73.35	0.04	15.17	0.63	0.02	0.23	1.55	7.10	1.41	0.02	0.83	100.34	42.02	
91DCP-174	4	Granitoid	66.71	0.34	14.43	3.62	0.05	2.53	5.66	4.35	0.31	0.07	2.28	100.33	58.06	

APPENDIX 2. Whole-rock geochemistry of the Border Zone, East Bull Lake intrusion. Part C. Trace element geochemistry.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	TYPE	Ba	Rb	Sr	Y	Zr	Nb	Sc	V	Cr	Co	Ni	Cu	Zn
90DCP-049	4	Mafic Vein	232	20	274	11	54		20	184	46	33	126	235	68
90DCP-237	4	Mafic Vein	432	16	309	<5	25		13	110	87	46	224	182	72
90DCP-287	4	Mafic Vein	265	22	431	6	36	5.19	29	129	193	36	238	86	95
90DCP-289	4	Mafic Vein	228	25	294	7	35	5.10	19	112	230	70	731	1721	100
90DCP-362	4	Mafic Vein	412	30	788	5	62	4.55	13	86	55	26	71	11	109
90DCP-365	4	Mafic Vein	619	39	834	13	71	4.19	12	71	188	22	124	45	101
90DCP-373	4	Mafic Vein	289	27	292	<5	29	4.19	15	49	221	59	656	467	91
90DCP-406	4	Mafic Vein	111	12	394	<5	17		13	50	155	44	362	505	61
91DCP-172	4	Mafic Vein	243	22	230	11	29	7.00		75	346	58	300	65	73
91DCP-173	4	Mafic Vein	240	22	257	14	32	5.40		136	179	59	287	123	69
91DCP-175	4	Mafic Vein	323	27	263	13	41	6.70		126	253	52	257	204	62
91DCP-176	4	Mafic Vein	360	27	288	15	58	7.40		133	154	46	267	181	59
91DCP-177	4	Mafic Vein	392	30	286	17	40	5.70		174	300	54	154	60	83
91DCP-178	4	Mafic Vein	443	32	302	16	45	6.30		211	172	49	146	56	86
90DCP-075	4	Hybrid	505	33	471	5	107	5.26	7	47	34	14	36	31	78
90DCP-077	4	Hybrid	724	28	354	13	128	9.84	7	52	20	10	17	20	57
90DCP-078	4	Hybrid	665	37	448	9	137	7.15	7	79	18	14	22	43	82
90DCP-375	4	Hybrid	237	33	331	9	86	6.48	11	50	130	54	489	959	91
90DCP-379	4	Hybrid	314	12	571	<5	83	5.81	3	28	<10	7	15	31	40
90DCP-383	4	Hybrid	150	8	493	34	195	9.05	32	356	12	26	58	159	57
90DCP-402	4	Hybrid	579	37	414	9	65	6.23	18	130	52	27	62	48	92
91DCP-171	4	Hybrid	472	23	558	14	61	8.50		46	29	31	99	49	30
90DCP-076	4	Granitoid	724	21	397	<5	102	6.98	2	22	<10	7	16	26	31
90DCP-271	4	Granitoid	1050	26	215	<5	54	9.62	1	5	<10	3	7	7	10
90DCP-368	4	Granitoid	407	15	575	5	81	7.17	2	10	10	8	18	22	31
90DCP-403	4	Granitoid	218	11	252	<5	74	7.58	1	16	<10	3	6	41	11
91DCP-148	4	Granitoid	492	26	386	14	62	9.30		18	<1	19	<1	1	18
91DCP-150	4	Granitoid	291	22	951	25	125	15.00		39	10	21	1	21	39
91DCP-151	4	Granitoid	529	14	289	13	58	7.90		13	0	31	1	1	16
91DCP-153	4	Granitoid	2000	31	418	13	74	8.70		10	0	24	<1	<1	20
91DCP-154	4	Granitoid	1350	28	250	13	61	8.90		12	0	28	1	1	17
91DCP-156	4	Granitoid	430	29	189	14	81	7.90		23	3	50	5	6	34
91DCP-158	4	Granitoid	1135	32	240	12	48	7.40		5	1	31	<1	1	117
91DCP-174	4	Granitoid	192	14	281	18	111	12.00		64	39	52	131	53	30

APPENDIX 2. Whole-rock geochemistry of the Border Zone, East Bull Lake intrusion. Part D. Molecular normative mineralogy.
See notes for Appendices for a list of abbreviations used and explanation.

SAMPLE#	UNIT	TYPE	Q	C	Or	Ab	An	Ne	Di	Hy	Ol	Mt	Il	Ap	NPC	NCI
90DCP-049	4	Mafic Vein	2.45	0.00	3.11	18.92	45.78	0.00	9.56	18.34	0.00	0.98	0.75	0.11	67.51	29.63
90DCP-237	4	Mafic Vein	1.61	0.00	2.72	23.13	49.18	0.00	7.75	14.76	0.00	0.63	0.17	0.04	65.55	23.32
90DCP-287	4	Mafic Vein	0.00	0.00	2.74	19.67	35.34	0.00	14.29	25.03	1.42	1.18	0.30	0.04	61.21	42.21
90DCP-289	4	Mafic Vein	1.46	0.00	4.03	17.05	35.46	0.00	4.49	35.59	0.00	1.49	0.38	0.04	62.72	41.95
90DCP-362	4	Mafic Vein	3.36	1.25	4.32	31.65	34.22	0.00	0.00	23.43	0.00	0.95	0.41	0.41	48.75	24.80
90DCP-365	4	Mafic Vein	0.95	0.00	6.97	33.05	27.30	0.00	9.31	20.14	0.00	0.93	0.36	0.99	40.55	30.74
90DCP-373	4	Mafic Vein	0.00	0.00	4.72	18.61	40.47	0.00	5.69	22.89	6.40	1.03	0.15	0.04	63.43	36.16
90DCP-406	4	Mafic Vein	0.00	0.00	1.63	22.33	42.49	0.00	6.32	23.91	2.24	0.84	0.17	0.06	63.94	33.48
91DCP-172	4	Mafic Vein	0.35	0.00	3.52	17.09	35.79	0.00	11.32	30.57	0.00	1.18	0.14	0.05	63.47	43.20
91DCP-173	4	Mafic Vein	0.61	0.00	3.31	18.69	33.11	0.00	15.62	27.16	0.00	1.22	0.25	0.03	60.08	44.25
91DCP-175	4	Mafic Vein	2.40	0.00	4.00	24.84	30.61	0.00	11.81	24.88	0.00	1.03	0.39	0.05	51.49	38.11
91DCP-176	4	Mafic Vein	5.73	0.00	4.44	28.64	28.48	0.00	9.37	21.91	0.00	0.98	0.35	0.09	46.25	32.61
91DCP-177	4	Mafic Vein	0.00	0.00	5.08	26.35	29.87	0.00	16.25	13.14	7.43	1.21	0.59	0.07	48.73	38.62
91DCP-178	4	Mafic Vein	4.59	0.00	5.91	20.98	30.20	0.00	13.87	22.53	0.00	1.25	0.59	0.08	52.91	38.25
90DCP-075	4	Hybrid	12.24	0.77	6.14	42.63	25.42	0.00	0.00	11.82	0.00	0.61	0.27	0.10	34.27	12.70
90DCP-077	4	Hybrid	26.23	0.99	6.42	36.95	19.75	0.00	0.00	8.19	0.00	0.57	0.59	0.31	31.29	9.34
90DCP-078	4	Hybrid	9.94	0.50	7.64	45.22	25.33	0.00	0.00	9.77	0.00	0.61	0.61	0.38	32.40	10.98
90DCP-375	4	Hybrid	12.04	1.55	4.09	26.79	30.54	0.00	0.00	23.54	0.00	0.96	0.36	0.13	49.72	24.85
90DCP-379	4	Hybrid	20.62	2.27	2.61	43.28	25.14	0.00	0.00	5.50	0.00	0.29	0.16	0.04	35.39	6.04
90DCP-383	4	Hybrid	23.98	0.00	0.71	1.97	32.27	0.00	29.23	7.14	0.00	1.43	2.61	0.66	92.33	40.41
90DCP-402	4	Hybrid	10.02	0.62	7.22	28.17	32.64	0.00	0.00	19.44	0.00	0.98	0.56	0.36	47.98	20.97
91DCP-171	4	Hybrid	6.58	0.00	3.96	38.23	39.91	0.00	5.25	5.23	0.00	0.42	0.29	0.13	48.61	11.19
90DCP-076	4	Granitoid	13.82	0.00	6.24	53.36	20.13	0.00	0.00	5.93	0.00	0.38	0.05	0.07	25.25	6.37
90DCP-271	4	Granitoid	25.36	0.58	13.44	52.22	7.31	0.00	0.00	0.97	0.00	0.09	0.02	0.00	10.01	1.09
90DCP-368	4	Granitoid	17.90	2.14	3.57	48.45	22.49	0.00	0.00	4.99	0.00	0.25	0.11	0.09	30.18	5.35
90DCP-403	4	Granitoid	28.92	0.14	1.90	51.77	14.96	0.00	0.00	1.93	0.00	0.17	0.17	0.04	21.80	2.27
91DCP-148	4	Granitoid	12.44	0.00	4.03	66.77	12.91	0.00	2.08	1.37	0.00	0.18	0.15	0.07	15.43	3.78
91DCP-150	4	Granitoid	4.02	0.00	3.83	59.93	20.92	0.00	8.33	2.00	0.00	0.48	0.32	0.18	24.70	11.13
91DCP-151	4	Granitoid	6.64	0.00	3.19	81.42	5.86	0.00	2.26	0.34	0.00	0.13	0.08	0.06	6.48	2.82
91DCP-153	4	Granitoid	5.52	0.00	14.87	69.01	8.10	0.00	0.53	1.63	0.00	0.13	0.12	0.09	8.81	2.41
91DCP-154	4	Granitoid	13.64	0.26	12.89	66.49	5.68	0.00	0.00	0.82	0.00	0.06	0.06	0.10	6.68	0.94
91DCP-156	4	Granitoid	20.43	0.00	4.79	59.16	9.03	0.00	1.20	4.72	0.00	0.35	0.21	0.10	12.37	6.48
91DCP-158	4	Granitoid	21.23	0.00	8.22	62.88	5.34	0.00	1.66	0.49	0.00	0.08	0.05	0.05	6.99	2.29
91DCP-174	4	Granitoid	23.17	0.00	1.89	39.93	19.40	0.00	7.07	7.45	0.00	0.46	0.48	0.16	31.69	15.46

APPENDIX 3. Whole-rock geochemistry of mafic dikes and sills from the Bull Lake area.
Part A. Reference information. See notes for Appendices for explanation.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME1	NAME2	Depth(m)	UTM-EAST	UTM-NORTH
90DCP-208	WEBLI	Folson Lk.	14a	G	G		403390	5143480
90DCP-209	WEBLI	Folson Lk.	14a	G	G		403340	5143490
90DCP-210	WEBLI	Folson Lk.	14a	G	G		403270	5143520
90DCP-211	WEBLI	Folson Lk.	14a	G	G		403160	5143580
90DCP-212	WEBLI	Folson Lk.	14a	G	G		403060	5143680
90DCP-213	WEBLI	Folson Lk.	14a	G	G		403250	5143600
90DCP-013	WEBLI	Hwy. 553	14b	yD	G		408010	5138800
90DCP-016	WEBLI	Hwy. 553	14b	yD	G		407910	5139010
90DCP-017	WEBLI	Hwy. 553	14b	yD	G		407910	5139030
90DCP-018	WEBLI	Hwy. 553	14b	yD	G		407910	5139050
90DCP-019	WEBLI	Hwy. 553	14b	yD	G		407910	5139070
90DCP-020	WEBLI	Hwy. 553	14b	yD	G		407910	5139090
90DCP-381	WEBLI	Parisien Lk.	14b	yD	G		408340	5141800
91DCP-160	WEBLI	DDH#EBL1	14b	yD	G	844.65		
90DCP-103	WEBLI	Folson Lk.	14b	yD	G		401050	5143300
90DCP-106	WEBLI	Folson Lk.	14b	yD	G		401050	5143290
90DCP-294	EEBLI	Site 5	14b	D	G		412640	5142120
90DCP-302	EEBLI	Site 5	14b	yD	G		412605	5142135
90DCP-305	EEBLI	Site 5	14b	D	G		412590	5142125
90DCP-306	EEBLI	Site 5	14b	D	G		412580	5142150
90DCP-316	EEBLI	Site 5	14b	D	G		412535	5142105
90DCP-003	WEBLI	Hwy. 553	14c	D	AG		408310	5137640
90DCP-009	WEBLI	Hwy. 553	14c	D	G		408300	5138210
90DCP-025	WEBLI	Hwy. 553	14c	D	G		407990	5139480
90DCP-027	WEBLI	Hwy. 553	14c	D	G		407980	5139620
90DCP-032	WEBLI	Hwy. 553	14c	D	G		407980	5140050
90DCP-034	WEBLI	Hwy. 553	14c	D	G		408010	5140220
90DCP-055	WEBLI	Bull Lk.	14c	D	G		407180	5142910
90DCP-092	WEBLI	Bull Lk.	14c	D	G		406290	5142010
90DCP-257	WEBLI	Bull Lk.	14c	D	G		405910	5142170
90DCP-380	WEBLI	Parisien Lk.	14c	D	AG		408450	5141510
91DCP-149	WEBLI	DDH#EBL1	14c	D	G	783.50		
90DCP-108	WEBLI	Folson Lk.	14c	D	G		400910	5143130
90DCP-118	WEBLI	Folson Lk.	14c	D	G		401120	5142350
90DCP-120	WEBLI	Folson Lk.	14c	D	AG		401250	5142640
90DCP-140	WEBLI	Folson Lk.	14c	D	G		402290	5141420
90DCP-146	WEBLI	Folson Lk.	14c	D	G		401820	5141610
90DCP-147	WEBLI	Folson Lk.	14c	D	G		401930	5141550
90DCP-149	WEBLI	Folson Lk.	14c	D	G		401750	5141790
90DCP-164	WEBLI	Folson Lk.	14c	D	G		402200	5142600
90DCP-167	WEBLI	Folson Lk.	14c	D	G		404880	5143070
90DCP-179	WEBLI	Folson Lk.	14c	D	G		404910	5143130
90DCP-222	WEBLI	Folson Lk.	14c	MS	G		402290	5142610
90DCP-455	WEBLI	Tee Lk.	14c	D	AG		402640	5142310

APPENDIX 3, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME1	NAME2	Depth(m)	UTM-EAST	UTM-NORTH
90DCP-429	TLI	Tee Lk.	17	G	G		403530	5149420
90DCP-430	TLI	Tee Lk.	17	G	G		403600	5149360
90DCP-431	TLI	Tee Lk.	17	G	G		403650	5149300
90DCP-432	TLI	Tee Lk.	17	G	G		403710	5149240
90DCP-433	TLI	Tee Lk.	17	G	G		403770	5149180
90DCP-434	TLI	Tee Lk.	17	G	G		403830	5149120
90DCP-435	TLI	Tee Lk.	17	G	G		403880	5149070
90DCP-436	TLI	Tee Lk.	17	qG	G		403970	5149000
90DCP-437	TLI	Tee Lk.	17	G	G		404080	5148860
90DCP-438	TLI	Tee Lk.	17	G	G		404160	5148770
90DCP-439	TLI	Tee Lk.	17	G	G		404250	5148600
90DCP-441	TLI	Tee Lk.	17	G	G		404380	5148490
90DCP-442	TLI	Tee Lk.	17	G	G		404620	5148240
90DCP-443	TLI	Tee Lk.	17	G	G		401700	5149580
90DCP-444	TLI	Tee Lk.	17	G	G		401730	5149510
90DCP-445	TLI	Tee Lk.	17	G	G		401820	5149430
90DCP-446	TLI	Tee Lk.	17	G	G		401950	5149250
90DCP-447	TLI	Tee Lk.	17	G	G		402010	5149160
90DCP-448	TLI	Tee Lk.	17	G	G		402050	5149090
90DCP-449	TLI	Tee Lk.	17	G	G		402130	5148980
90DCP-450	TLI	Tee Lk.	17	G	G		402210	5148880
90DCP-451	TLI	Tee Lk.	17	G	G		402270	5148800
90DCP-452	TLI	Tee Lk.	17	G	G		402350	5148680
90DCP-453	TLI	Tee Lk.	17	G	G		402450	5148550
90DCP-454	TLI	Tee Lk.	17	G	G		402510	5148490
90DCP-456	BLI	Barrow Lk.	17	G	G		414950	5150850
90DCP-457	BLI	Barrow Lk.	17	G	G		414910	5150930
90DCP-458	BLI	Barrow Lk.	17	G	G		414860	5151020
90DCP-459	BLI	Barrow Lk.	17	G	G		414780	5151080
90DCP-460	BLI	Barrow Lk.	17	G	G		414620	5151340
90DCP-461	BLI	Barrow Lk.	17	G	G		414580	5151400
90DCP-462	BLI	Barrow Lk.	17	G	AG		414500	5151510
90DCP-463	BLI	Barrow Lk.	17	G	G		414380	5151680
90DCP-464	BLI	Barrow Lk.	17	G	G		414290	5151800
90DCP-465	BLI	Barrow Lk.	17	G	G		414220	5151890
90DCP-466	BLI	Barrow Lk.	17	G	G		414040	5152090
90DCP-469	SLI	Splake Lk.	17	G	G		412590	5148770
90DCP-470	SLI	Splake Lk.	17	G	G		412600	5148800
90DCP-471	SLI	Splake Lk.	17	qG	G		412600	5148800
90DCP-472	SLI	Splake Lk.	17	G	G		412570	5148730
90DCP-474	SLI	Splake Lk.	17	G	G		412200	5149280
90DCP-475	SLI	Splake Lk.	17	G	G		412130	5149370
90DCP-476	SLI	Splake Lk.	17	G	G		412100	5149400
90DCP-478	SLI	Splake Lk.	17	G	G		411820	5149480
90DCP-479	EEBLI	Site 5	17	G	G		412930	5142410
90DCP-480	EEBLI	Site 5	17	G	G		412840	5142370

APPENDIX 4. Whole-rock geochemistry of footwall rocks from the Bull Lake area.

APPENDIX 4. Whole-rock geochemistry of footwall rocks from the Bull Lake area. Part B. Major element geochemistry.

APPENDIX 4. Whole-rock geochemistry of footwall rocks from the Bull Lake area. Part C. Trace element geochemistry.

APPENDIX 4. Whole-rock geochemistry of footwall rocks from the Bull Lake area. Part D. Molecular normative mineralogy.

Part A. Reference information. See notes for Appendices for explanation.

See notes for Appendices for a list of abbreviations used and explanation.

See notes for Appendices for a list of abbreviations used and explanation.

See notes for Appendices for a list of abbreviations used and explanation.

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SAMPLE# LOC'N 1 LOC'N 2 UNIT    TYPE    EAST    NORTH   SAMPLE# UNIT    TYPE    SiO2    TiO
2       Al2O3   Fe2O3   MnO     MgO     CaO     Na2O    K2O     P2O5    LOI     TOTAL   Mg#
        CO2     SAMPLE# UNIT    TYPE    Ba      Rb      Sr      Y       Zr      Nb      Sc
V       Cr      Co      Ni      Cu      Zn      SAMPLE# UNIT    TYPE    Q       C       Or
Ab      An      Ne      Di      Hy      Ol      Mt      Il      Ap      NPC     NCI
90DCP-004       WEBLI   Hwy. 553        3       GR      408300  5137600 90DCP-004       3
GR      74.23   0.09    14.02   0.84    0.01    0.18    0.43    4.05    4.47    0.01    0.3
0       98.63   29.73   0.05    90DCP-004       3       GR      446     140     100     9
84      13      2       6       <10     3       6       8       18      90DCP-004       3
GR      30.26   1.99    26.97   37.08   2.07    0.00    0.00    1.37    0.00    0.11    0.1
3       0.03    3.13    1.61
90DCP-005       WEBLI   Hwy. 553        3       SY      408370  5137910 90DCP-005       3
SY      64.61   0.47    16.97   3.22    0.05    1.08    1.82    5.10    4.89    0.21    0.8
0       99.22   39.94   0.22    90DCP-005       3       SY      948     171     471     37
603     34      4       43      <10     5       9       21      56      90DCP-005       3
SY      9.02    0.54    29.05   46.04   7.71    0.00    0.00    6.13    0.00    0.40    0.6
6       0.44    9.32    7.19
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90DCP-007          WEBLI    Hwy. 553           3        SY       408310   5138000  90DCP-007         3
SY        61.59    0.52     17.89    3.85      0.06     0.70     2.39     5.14     6.10     0.14     1.3
0         99.69    26.53    0.78     90DCP-007          3        SY       976      142      510      43
856       37       4        46       <10       5        6        24       48       90DCP-007         3
SY        1.18     0.00     36.18    46.33     7.79     0.00     2.56     4.46     0.00     0.48     0.7
3         0.29     8.63     8.23
90DCP-008          WEBLI    Hwy. 553           3        SY       408300   5138130  90DCP-008         3
SY        61.98    0.45     18.22    4.13      0.05     0.88     1.38     5.50     6.57     0.17     0.6
0         99.93    29.66    0.11     90DCP-008          3        SY       768      211      316      35
762       32       2        46       <10       5        6        26       44       90DCP-008         3
SY        0.00     0.00     38.46    48.93     5.59     0.00     0.06     2.35     3.13     0.51     0.6
2         0.35     6.01     6.67
90DCP-011          WEBLI    Hwy. 553           3        SY       408250   5138390  90DCP-011         3
SY        60.61    0.56     17.87    4.75      0.12     1.43     2.53     5.83     5.36     0.29     0.8
0         100.14   37.41    0.17     90DCP-011          3        SY       1160     212      682      44
922       35       5        61       14        7        11       20       118      90DCP-011         3
SY        0.00     0.00     31.36    51.12     6.71     0.42     3.03     0.00     5.39     0.58     0.7
8         0.61     7.53     9.78
90DCP-012          WEBLI    Hwy. 553           3        SY       408200   5138610  90DCP-012         3
SY        63.97    0.40     18.49    2.73      0.05     0.50     0.99     5.81     6.20     0.10     0.6
0         99.84    26.74    0.22     90DCP-012          3        SY       677      257      296      36
731       37       2        32       <10       4        5        13       41       90DCP-012         3
SY        2.25     0.72     36.19    51.56     4.20     0.00     0.00     4.00     0.00     0.34     0.5
5         0.21     4.56     4.88
90DCP-014          WEBLI    Hwy. 553           3        SY       408010   5138795  90DCP-014         3
SY        61.34    0.50     18.03    4.16      0.08     0.87     1.93     5.41     6.59     0.29     0.9
0         100.10   29.21    0.49     90DCP-014          3        SY       1300     249      853      38
657       34       3        46       <10       5        8        9        90       90DCP-014         3
SY        0.00     0.00     38.70    47.85     5.44     0.21     1.73     0.00     4.27     0.51     0.6
9         0.60     5.91     7.20
90DCP-015          WEBLI    Hwy. 553           3        SY       407990   5138880  90DCP-015         3
SY        62.37    0.41     17.98    3.01      0.08     0.69     1.52     5.31     7.06     0.16     0.5
0         99.09    31.26    0.04     90DCP-015          3        SY       848      263      576      34
249       30       3        36       <10       5        7        9        67       90DCP-015         3
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SY      0.00    0.00    41.60   47.49   4.37    0.00    1.65    2.21    1.40    0.37    0.5
7       0.34    4.68    6.20
90DCP-021       WEBLI   Hwy. 553        3       SY      407910  5139180 90DCP-021       3
SY      61.43   0.55    18.30   3.04    0.06    0.95    1.42    5.17    6.88    0.18    0.8
0       98.78   38.32   0.17    90DCP-021       3       SY      1550    209     449     38
356     38      3       42      <10     5       8       17      59      90DCP-021       3
SY      0.00    0.23    40.78   46.55   5.84    0.00    0.00    3.92    1.14    0.38    0.7
7       0.39    6.27    6.21
90DCP-022       WEBLI   Hwy. 553        3       SY      407900  5139280 90DCP-022       3
SY      59.13   0.69    17.14   5.06    0.11    1.66    3.11    5.35    5.86    0.40    1.3
0       99.81   39.46   0.75    90DCP-022       3       SY      1140    195     611     53
334     36      6       60      <10     8       10      21      94      90DCP-022       3
SY      0.00    0.00    34.66   44.15   5.46    2.40    5.89    0.00    5.00    0.63    0.9
6       0.85    6.48    12.48
90DCP-023       WEBLI   Hwy. 553        3       SY      407990  5139320 90DCP-023       3
SY      60.47   0.73    17.61   4.84    0.09    1.26    2.60    5.10    5.98    0.27    0.7
0       99.66   34.07   0.10    90DCP-023       3       SY      1380    190     705     58
1550    37      5       65      10      8       11      28      88      90DCP-023       3
SY      0.00    0.00    35.35   45.79   7.50    0.00    2.85    5.01    1.30    0.60    1.0
2       0.58    8.46    10.78
90DCP-024       WEBLI   Hwy. 553        3       SY      408010  5139410 90DCP-024       3
SY      60.32   0.64    17.59   3.83    0.10    1.30    2.75    5.31    6.22    0.33    1.0
0       99.40   40.25   0.42    90DCP-024       3       SY      1540    181     986     44
264     38      4       55      <10     7       9       21      80      90DCP-024       3
SY      0.00    0.00    36.77   46.17   5.78    0.93    4.56    0.00    3.72    0.48    0.9
0       0.69    6.51    9.66
90DCP-026       WEBLI   Hwy. 553        3       SY      408020  5139520 90DCP-026       3
SY      60.90   0.41    17.54   4.53    0.09    1.06    2.47    5.15    6.71    0.23    0.5
0       99.60   31.59   0.10    90DCP-026       3       SY      1450    287     1580    33
277     18      3       62      <10     8       7       8       99      90DCP-026       3
SY      0.00    0.00    39.47   44.33   4.93    1.03    4.58    0.00    4.02    0.56    0.5
7       0.49    5.56    9.74
90DCP-028       WEBLI   Hwy. 553        3       SY      407970  5139680 90DCP-028       3
SY      61.47   0.50    17.93   4.20    0.09    0.82    2.18    5.57    6.21    0.18    0.5
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0       99.66   27.76   0.66    90DCP-028       3       SY      1220    223     1050    38
401     31      3       56      <10     7       6       4       82      90DCP-028       3
SY      0.00    0.00    36.47   49.30   5.54    0.24    3.22    0.00    3.65    0.52    0.6
9       0.38    6.06    8.08
90DCP-029       WEBLI   Hwy. 553        3       SY      407980  5139790 90DCP-029       3
SY      56.70   0.62    14.50   6.07    0.23    2.75    7.24    4.31    4.51    0.58    0.8
0       98.31   47.34   0.30    90DCP-029       3       SY      1840    112     1080    65
430     38      9       86      <10     13      10      27      106     90DCP-029       3
SY      0.00    0.00    27.26   38.37   7.07    0.75    20.59   0.00    3.05    0.77    0.8
9       1.26    9.72    25.30
90DCP-030       WEBLI   Hwy. 553        3       SY      407950  5139890 90DCP-030       3
SY      59.82   0.63    17.36   5.07    0.11    1.42    2.73    5.40    6.15    0.40    0.6
0       99.70   35.68   0.11    90DCP-030       3       SY      1810    159     594     44
414     29      5       64      <10     9       12      18      77      90DCP-030       3
SY      0.00    0.00    36.18   44.64   4.99    2.16    4.68    0.00    4.99    0.63    0.8
7       0.85    5.82    11.17
90DCP-031       WEBLI   Hwy. 553        3       SY      407960  5139960 90DCP-031       3
SY      60.47   0.50    18.04   4.10    0.08    1.12    2.22    5.40    6.45    0.26    0.5
0       99.14   35.03   0.13    90DCP-031       3       SY      1560    162     680     34
297     25      4       54      10      7       10      12      101     90DCP-031       3
SY      0.00    0.00    38.03   45.59   5.95    1.63    2.64    0.00    4.40    0.51    0.7
0       0.56    6.64    8.25
90DCP-033       WEBLI   Hwy. 553        3       SY      408020  5140140 90DCP-033       3
SY      61.31   0.43    18.17   3.82    0.09    1.03    2.41    5.22    6.65    0.25    0.4
0       99.78   34.87   0.08    90DCP-033       3       SY      1120    195     849     33
258     24      4       48      <10     8       10      18      57      90DCP-033       3
SY      0.00    0.00    38.95   45.63   6.44    0.49    3.00    0.00    3.90    0.47    0.6
0       0.53    7.08    7.97
90DCP-144       WEBLI   Folson Lk.      3       GDI     402270  5141460 90DCP-144       3
GDI     69.35   0.55    13.44   5.60    0.06    1.71    0.85    4.56    2.35    0.23    0.9
0       99.61   37.74   0.21    90DCP-144       3       GDI     819     64      50      30
280     19      10      24      <10     6       8       8       90      90DCP-144       3
GDI     25.65   2.68    14.23   41.93   2.80    0.00    0.00    10.71   0.00    0.71    0.7
9       0.50    4.74    12.21
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90DCP-107           WEBLI     Folson Lk.          2         T         400950    5143200   90DCP-107           2
T         78.96     0.11      10.53     2.40      0.02      0.71      0.26      4.86      0.44      0.00      0.4
0         98.68     36.95     0.08      90DCP-107           2         T         86        12        44        145
          350       39        2         3         <10       3         7         16        21        90DCP-107
2         T         43.99     1.79      2.66      45.02     1.34      0.00      0.00      4.74      0.00      0.3
1         0.15      0.00      2.73      5.20
90DCP-145           WEBLI     Folson Lk.          1         DAC       401800    5141610   90DCP-145           1
DAC       64.92     0.70      15.20     5.22      0.10      2.94      4.03      4.15      0.94      0.17      1.6
7         100.04    52.73     0.09      90DCP-145           1         DAC       328       35        163       22
181       7         16        102       74        16        47        26        68        90DCP-145           1
DAC       20.76     0.50      5.68      38.12     19.31     0.00      0.00      13.59     0.00      0.66      1.0
0         0.37      30.60     15.25
90DCP-148           WEBLI     Folson Lk.          1         DAC       401870    5141720   90DCP-148           1
DAC       69.06     0.57      12.52     7.17      0.04      1.63      0.60      3.83      3.11      0.21      0.7
9         99.53     31.05     0.06      90DCP-148           1         DAC       933       100       64        29
289       13        10        19        10        8         6         5         30        90DCP-148           1
DAC       26.61     2.57      19.01     35.57     1.64      0.00      0.00      12.39     0.00      0.92      0.8
2         0.46      2.92      14.14
90DCP-158           WEBLI     Folson Lk.          1         DAC       401720    5142070   90DCP-158           1
DAC       68.75     0.56      12.64     8.14      0.06      1.48      0.46      3.31      3.22      0.21      0.9
0         99.73     26.48     0.06      90DCP-158           1         DAC       832       106       54        26
277       13        10        20        10        8         5         5         44        90DCP-158           1
DAC       28.89     3.85      19.81     30.94     0.93      0.00      0.00      13.25     0.00      1.05      0.8
1         0.46      1.80      15.11
90DCP-159           WEBLI     Folson Lk.          1         DAC       401760    5142030   90DCP-159           1
DAC       70.29     0.57      12.83     6.21      0.03      1.76      0.48      5.65      1.31      0.21      0.7
2         100.06    35.95     0.06      90DCP-159           1         DAC       150       31        39        40
286       11        10        22        14        5         5         10        16        90DCP-159           1
DAC       24.38     1.95      7.85      51.41     1.00      0.00      0.00      11.38     0.00      0.78      0.8
0         0.45      1.67      12.96
90DCP-180           WEBLI     Folson Lk.          1         DAC       402290    5141490   90DCP-180           1
DAC       53.40     1.35      16.10     16.40     0.14      3.87      1.12      2.68      2.33      0.18      3.1
0         100.67    31.85     0.10      90DCP-180           1         DAC       719       46        16        18
167       8         35        314       15        43        41        7         77        90DCP-180           1
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DAC     11.89   8.82    14.69   25.67   4.66    0.00    0.00    29.67   0.00    2.18    2.0
1       0.41    10.35   33.86
90DCP-182       WEBLI   Folson Lk.      1       DAC     402300  5141600 90DCP-182       1
DAC     69.04   0.58    12.97   6.62    0.04    1.73    0.47    3.61    3.69    0.21    0.8
5       99.81   34.11   0.41    90DCP-182       1       DAC     854     153     71      34
292     13      11      19      10      9       5       6       26      90DCP-182       1
DAC     26.04   3.03    22.46   33.39   0.97    0.00    0.00    11.97   0.00    0.85    0.8
3       0.46    1.71    13.65
90DCP-183       WEBLI   Folson Lk.      1       BAS     402340  5142640 90DCP-183       1
BAS     51.74   1.39    16.02   15.20   0.17    5.82    0.66    2.56    2.94    0.17    3.3
3       100.00  43.13   0.07    90DCP-183       1       BAS     501     127     27      27
145     6       47      386     41      35      49      15      79      90DCP-183       1
BAS     7.42    9.11    18.47   24.44   2.29    0.00    0.00    33.83   0.00    2.01    2.0
6       0.38    5.06    37.90
90DCP-184       WEBLI   Folson Lk.      1       DAC     402370  5141650 90DCP-184       1
DAC     69.46   0.56    12.71   5.68    0.05    1.49    0.93    4.13    3.77    0.21    0.6
6       99.65   34.19   0.22    90DCP-184       1       DAC     948     100     69      36
288     12      11      19      10      7       5       13      43      90DCP-184       1
DAC     23.05   0.74    22.81   37.97   3.30    0.00    0.00    10.16   0.00    0.72    0.8
0       0.46    5.15    11.68
90DCP-190       WEBLI   Folson Lk.      1       DAC     402860  5142130 90DCP-190       1
DAC     68.54   0.45    12.40   6.95    0.07    1.14    0.63    3.00    4.67    0.09    0.8
0       98.76   24.56   0.23    90DCP-190       1       DAC     637     167     30      64
357     23      6       1       <10     5       3       13      49      90DCP-190       1
DAC     25.62   1.69    28.92   28.25   2.64    0.00    0.00    11.11   0.00    0.91    0.6
6       0.21    4.41    12.67
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91DCP-548	WEBLI	Moon Lk.	4	LG	408185	5141910	180	77	20	
91DCP-555	WEBLI	Moon Lk.	4	LG	408935	5141830	6200	984	318	6.57
91DCP-542	WEBLI	Moon Lk.	4	pG	407940	5141930	3	10	35	
90DCP-364	WEBLI	Moon Lk.	4	qG	408250	5141380	1	<1	7	
90DCP-365	WEBLI	Moon Lk.	4	qG	408180	5141440	<1	<1	<2	
90DCP-375	WEBLI	Moon Lk.	4	qG	407450	5141330	225	80	10	
91DCP-525	WEBLI	Moon Lk.	4	qG	407905	5141505	200	95	40	
91DCP-531	WEBLI	Moon Lk.	4	qG	407935	5141410	30	16	10	
91DCP-535	WEBLI	Moon Lk.	4	qG	407880	5141460	8	9	5	
90DCP-373	WEBLI	Moon Lk.	4	qLG	407630	5141440	342	139	19	
91DCP-446	WEBLI	Moon Lk.	4	qLG	407910	5141530	84	40	16	
91DCP-554	WEBLI	Moon Lk.	4	vtG	408370	5141860	2	2	10	
91DCP-519	WEBLI	Moon Lk.	6	A+iP	407960	5141965	695	<1	23	
91DCP-500	WEBLI	Moon Lk.	6	iG	407845	5141750	665	390	38	
91DCP-501	WEBLI	Moon Lk.	6	iG	407835	5141790	1680	1160	215	
91DCP-395	EEBLI	Goulding Lk.	6	iLG	415971	5140846	395	134	35	
91DCP-396	EEBLI	Goulding Lk.	6	iLG	415971	5140846	117	39	7	
91DCP-397	EEBLI	Goulding Lk.	6	iLG	415971	5140846	715	14	63	
91DCP-398	EEBLI	Goulding Lk.	6	iLG	415971	5140846	365	177	50	
91DCP-461	WEBLI	Moon Lk.	6	iP	407930	5141600	390	160	17	
91DCP-469	WEBLI	Moon Lk.	6	iP	407775	5141450	2460	781	150	3.77
91DCP-472	WEBLI	Moon Lk.	6	iP	407830	5141510	140	110	27	
91DCP-474	WEBLI	Moon Lk.	6	iP	407910	5141555	410	255	65	
91DCP-479	WEBLI	Moon Lk.	6	iP	407855	5141785	620	310	70	
91DCP-480	WEBLI	Moon Lk.	6	iP	407850	5141775	450	230	60	
91DCP-482	WEBLI	Moon Lk.	6	iP	407800	5141770	260	70	31	
91DCP-483	WEBLI	Moon Lk.	6	iP	407775	5141780	245	110	85	
91DCP-485	WEBLI	Moon Lk.	6	iP	407805	5141675	1800	415	400	
91DCP-486	WEBLI	Moon Lk.	6	iP	407795	5141740	230	215	30	
91DCP-487	WEBLI	Moon Lk.	6	iP	407800	5141740	1170	965	257	5.84
91DCP-490	WEBLI	Moon Lk.	6	iP	407825	5141720	700	570	200	
91DCP-491	WEBLI	Moon Lk.	6	iP	407825	5141720	555	400	210	
91DCP-492	WEBLI	Moon Lk.	6	iP	407825	5141720	765	500	280	
91DCP-493	WEBLI	Moon Lk.	6	iP	407825	5141720	489	308	258	0.38
91DCP-494	WEBLI	Moon Lk.	6	iP	407825	5141720	470	445	105	

APPENDIX 5, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Os	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-464	WEBLI	Moon Lk.	7	A	407920	5141600	140	33	12					1015	330	41	0.50	2.40	1.60
91DCP-473	WEBLI	Moon Lk	7	A	407840	5141530	990	940	52					2790	668		0.39		
91DCP-507	WEBLI	Moon Lk	7	A	408115	5140735	610	260	58					628	234		0.05		
91DCP-508	WEBLI	Moon Lk.	7	A	408065	5140655	3200	900	120					709	138		0.06		
91DCP-509	WEBLI	Moon Lk	7	A	407680	5140690	1000	270	93					6500	2750		1.14		
91DCP-510	WEBLI	Moon Lk.	7	A	410480	5141670	4100	1700	240					3360	545		0.43		
91DCP-511	WEBLI	Moon Lk	7	A	410480	5141670	1600	350	45					1640	433		0.16		
91DCP-512	WEBLI	Moon Lk.	7	A	410480	5141670	1900	510	83					3150	943		0.47		
91DCP-514	WEBLI	Moon Lk.	7	A	408065	5140655	1500	300	270					8960	2990		0.99		
91DCP-515	WEBLI	Moon Lk	7	A	407895	5141960	1370	320	210					2700	1030	80	0.03	3.80	0.71
91DCP-518	WEBLI	Moon Lk.	7	A	407925	5141965	2060	690	275					4630	1230	65	0.04	10.0	1.80
91DCP-547	WEBLI	Moon Lk.	7	A	408245	5141945	2700	710	340					4890	1050	52	0.92	8.80	1.60
91DCP-560	WEBLI	Site 3	7	A	410480	5141280	8690	2140	354	20.8	55.4	30.5	321	1240	350	19	0.23	1.30	0.51
91DCP-561	WEBLI	Site 3	7	A	410480	5141670	2120	560	136					1630	950	43	0.68	3.60	0.83
91DCP-562	WEBLI	Site 3	7	A	410480	5141670	1100	590	18					938	185	15	0.06	0.38	0.19
91DCP-563	WEBLI	Site 3	7	A	410480	5141670	1000	290	30					288	49	19	0.09	0.53	0.38
91DCP-564	WEBLI	Site 3	7	A	410480	5141670	550	130	76					1180	475	23	0.37	1.60	0.33
91DCP-565	WEBLI	Site 3	7	A	410480	5141670	600	275	55					1850	475	34	0.57	3.10	0.42
91DCP-567	WEBLI	Site 3	7	A	410480	5141670	2920	690	192					3300	850	31	0.77	5.10	1.20
91DCP-568	WEBLI	Site 3	7	A	410480	5141670	2570	640	100					1060	430	23	0.22	1.50	1.20
91DCP-569	WEBLI	Site 3	7	A	410480	5141670	1720	840	90					763	525	34	0.50	3.20	0.38
91DCP-570	WEBLI	Site 3	7	A	410480	5141670	1700	340	140					1410	22	30	0.59	3.30	0.62
91DCP-586	WEBLI	Site 1	7	A	410360	5141590	480	100	9					69	110	13	0.03	0.09	0.08
90DCP-043	WEBLI	Moon Lk.	7	G	407890	5140560	129	42	3					19	266	57	0.01		
90DCP-375	WEBLI	Moon Lk.	7	G	407450	5141330	225	54	10					959	489	54	0.09		
90DCP-376	WEBLI	Moon Lk.	7	G	407500	5141320	180	75	8					613	323	32	0.06	0.66	1.11
91DCP-110	WEBLI	DDH#EBL1	7	G	616.55		15.1	12.5	2.66		0.211	1.27		178	156	47	0.02		
91DCP-118	WEBLI	DDH#EBL1	7	G	654.67		80.1	8.1	2.19		0.269	0.47		338	257	56	0.05		
91DCP-129	WEBLI	DDH#EBL1	7	G	701.80		<0.7	12.1	3.63		0.044			212	140	62	0.03		
91DCP-179B	WEBLI	DDH#EBL4	7	G	417.50		2220	493	42.2		2.830	18.7		1850	2090	105	1.56	2.067	
91DCP-476	WEBLI	Moon Lk.	7	G	407890	5141945	1250	225	110					2750	1500	93	0.66	3.50	0.59
91DCP-481	WEBLI	Moon Lk.	7	G	407830	5141770	450	170	125					1180	430	41	0.28	2.70	3.20
91DCP-499	WEBLI	Moon Lk.	7	G	407845	5141750	860	310	51					3000	981		0.52		
90DCP-300	EEBLI	Site 5	7	G	412620	5142110	20	16	<2					213	235	41	0.04		
90DCP-311	EEBLI	Site 5	7	G	412565	5142125	244	59	10					149	201		0.03		
90DCP-322	EEBLI	Site 5	7	G	412605	5142085	74	21	4					96	193	38	0.02		
90DCP-323	EEBLI	Site 5	7	G	412610	5142085	240	64	8					115	244	44	0.02		
90DCP-324	EEBLI	Site 5	7	G	412615	5142090	158	98	5					133	199	41	0.03		
90DCP-333	EEBLI	Site 5	7	G	412580	5142070	310	72	40					749	394	51	0.11		
91DCP-304	EEBLI	Nodule Pond	7	G	420205	5140039	390	113	33					2750	650	85	0.61	2.60	0.21
90DCP-283	WEBLI	Moon Lk.	7	LG	407890	5141600	50	20	3					235	239	45	0.09	0.48	0.33
90DCP-284	WEBLI	Moon Lk.	7	LG	407900	5141610	100	34	4					405	376	47	0.43	0.58	1.79
90DCP-286	WEBLI	Moon Lk	7	LG	407980	5141620	510	230	70		4		20	970	732	47	0.38	1.40	2.00
90DCP-289	WEBLI	Moon Lk	7	LG	407860	5141570	332	183	35		2.2		14.0	1720	731	70	0.63		
90DCP-290	WEBLI	Moon Lk	7	LG	407830	5141550	612	272	35		6.7		15.3	2120	739	63	0.75	2.89	2.80
90DCP-350	WEBLI	Site 3	7	LG	410450	5141701	414	362	16					1040	310		0.18		
90DCP-356	WEBLI	Parisien Lk	7	LG	409640	5141180	348	112	12		2.7		16.4	948	294	31	0.17	0.99	4.20

APPENDIX 5, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Os	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-371	WEBLI	Moon Lk	7	LG	407750	5141520	245	75	16					1050	682	52	0.30	1.21	0.94
90DCP-372	WEBLI	Moon Lk	7	LG	407690	5141480	1440	355	70		8.2		42	3480	1340	65	1.17	1.47	2.00
90DCP-373	WEBLI	Moon Lk	7	LG	407630	5141440	342	139	19					467	656	59	0.07		
90DCP-374	WEBLI	Moon Lk	7	LG	407520	5141380	420	115	26		2.4		13.6	1940	657	47	0.62	1.76	2.70
90DCP-394	WEBLI	Moon Lk	7	LG	407820	5141900	330	110	50					1780	640	60	0.47	1.58	1.70
90DCP-395	WEBLI	Moon Lk	7	LG	407850	5141930	255	151	34					1600	500	60	0.41	1.76	2.40
90DCP-407	WEBLI	Parisien Lk	7	LG	408980	5141650	1750	343	115		7.7		59	2790	960	47	0.46	2.29	0.94
90DCP-408	WEBLI	Parisien Lk	7	LG	408990	5141660	525	205	38		1.9			316	216	29	0.05		
91DCP-113	WEBLI	DDH#EBL1	7	LG	644.09		488	301	33.1		1.05	10.6		548	362	28	0.09		
91DCP-114	WEBLI	DDH#EBL1	7	LG	648.76		902	560	52.6		3.83	8.44		954	674	28	0.28	0.97	
91DCP-115	WEBLI	DDH#EBL1	7	LG	650.07		486	240	19.7		1.11	31.3		677	542	32	0.25		
91DCP-116	WEBLI	DDH#EBL1	7	LG	652.16		167	86.4	5.83		2.68	10.3		157	169	28	0.01		
91DCP-117	WEBLI	DDH#EBL1	7	LG	652.70		401	141	42.6		0.224	9.93		2334	663	49	0.67		
91DCP-120	WEBLI	DDH#EBL1	7	LG	660.46		146	103	7.54		0.546	8.95		199	291	43	0.04		
91DCP-121	WEBLI	DDH#EBL1	7	LG	662.47		944	120	23.1		0.502	1.76		1070	651	40	0.46		
91DCP-123	WEBLI	DDH#EBL1	7	LG	684.22		950	243	38.1		2.48			1580	1120	78	0.47	0.532	
91DCP-125	WEBLI	DDH#EBL1	7	LG	693.30		359	194	43.2		0.016	5.43		1180	314	50	0.31	1.289	
91DCP-131	WEBLI	DDH#EBL1	7	LG	708.40		102	38.9	1.83		1.88	0.77		27	121	37	<0.01		
91DCP-140	WEBLI	DDH#EBL1	7	LG	750.83		720	203	17.3		0.291	2.72		476	618	54	0.09	1.076	
91DCP-143	WEBLI	DDH#EBL1	7	LG	768.05		200	34.7	1.82		0.221	1.13		140	336	58	0.02	0.099	
91DCP-179A	WEBLI	DDH#EBL4	7	LG	418.00		597	172	35.5		0.454	8.69		1032	699	38	0.48		
91DCP-179C	WEBLI	DDH#EBL4	7	LG	417.00		602	191	32.9		0.248	5.21		1450	1220	57	0.87		
91DCP-179D	WEBLI	DDH#EBL4	7	LG	416.50		312	127	18.1		0.314	6.14		787	852	51	0.50		
91DCP-420	WEBLI	Moon Lk	7	LG	407860	5140580	370	200	120					1860	307		0.09		
91DCP-430	WEBLI	Moon Lk	7	LG	407590	5141320	17	220	17					1990	1200	83	0.88	3.00	4.10
91DCP-432	WEBLI	Moon Lk	7	LG	407725	5141430	1300	630	130					3370	1010		0.45		
91DCP-433	WEBLI	Moon Lk	7	LG	407750	5141340	1200	500	58					2030	580	44	0.25	4.3	2.2
91DCP-434	WEBLI	Moon Lk	7	LG	407620	5141340	950	180	19					1790	760	60	0.47	1.7	2.6
91DCP-435	WEBLI	Moon Lk	7	LG	407615	5141330	450	170	26					1560	470	52	0.38	1.4	0.62
91DCP-436	WEBLI	Moon Lk	7	LG	407480	5141310	650	180	24					2420	471		0.58		
91DCP-437	WEBLI	Moon Lk	7	LG	407450	5141290	275	88	17					445	820	84	0.41	1.40	2.40
91DCP-438	WEBLI	Moon Lk	7	LG	407440	5141310	450	43	31					2050	730	95	0.58	4.60	3.10
91DCP-439	WEBLI	Moon Lk	7	LG	407745	5141445	1020	210	45					3250	1460	70	0.81	5.30	1.50
91DCP-440	WEBLI	Moon Lk	7	LG	407750	5141440	900	445	50					2050	840	58	0.37	3.60	4.70
91DCP-441	WEBLI	Moon Lk	7	LG	407745	5141440	650	160	15					1120	580	33	0.22	1.40	1.10
91DCP-442	WEBLI	Moon Lk	7	LG	407710	5141400	200	60	9					795	480	69	0.49	1.40	1.70
91DCP-443	WEBLI	Moon Lk	7	LG	407695	5141390	360	100	13					650	470	54	0.27	1.20	1.80
91DCP-444	WEBLI	Moon Lk	7	LG	407695	5141395	360	120	20					1620	648		0.32		
91DCP-451	WEBLI	Moon Lk	7	LG	407860	5141575	530	220	19					1520	720	50	0.33	2.6	1.3
91DCP-452	WEBLI	Moon Lk	7	LG	407960	5141590	520	200	27					1700	910	74	0.4	2	1.1
91DCP-453	WEBLI	Moon Lk	7	LG	407955	5141580	250	78	29					1780	780	69	0.83	2.4	1.5
91DCP-455	WEBLI	Moon Lk	7	LG	407950	5141580	510	105	11					1170	570	67	0.85	1.6	1.7
91DCP-456	WEBLI	Moon Lk	7	LG	407950	5141580	600	105	12					1300	650	70	0.63	1.9	1.7
91DCP-457	WEBLI	Moon Lk	7	LG	407955	5141585	460	155	32					2070	880	71	0.68	2.9	2.6
91DCP-458	WEBLI	Moon Lk	7	LG	407950	5141590	350	215	33					1810	550	57	0.34	1.5	1.6
91DCP-459	WEBLI	Moon Lk	7	LG	407950	5141590	375	230	29					1210	560	58	0.31	1.4	1.1
91DCP-460	WEBLI	Moon Lk	7	LG	407930	5141600	560	165	28					2100	720	61	0.73	3.2	2.3

APPENDIX 5, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Os	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-462	WEBLI	Moon Lk	7	LG	407925	5141590	68	15	4					415	260	31	0.04	0.81	1.3
91DCP-463	WEBLI	Moon Lk	7	LG	407925	5141600	925	290	42					2820	990	63	0.79	7.3	2.4
91DCP-465	WEBLI	Moon Lk	7	LG	407765	5141435	45	30	9					700	650	59	0.24	0.64	0.41
91DCP-466	WEBLI	Moon Lk	7	LG	407765	5141435	580	330	40					4000	1050	68	0.96	4.4	3
91DCP-467	WEBLI	Moon Lk	7	LG	407775	5141450	2000	940	120					7080	2630		1.87		
91DCP-470	WEBLI	Moon Lk	7	LG	407775	5141450	160	100	20					1000	390	40	0.1	0.84	0.98
91DCP-471	WEBLI	Moon Lk	7	LG	407825	5141505	340	170	12					1220	450	48	0.34	1.6	1.7
91DCP-475	WEBLI	Moon Lk	7	LG	407870	5141945	2270	606	325	2.78	16.2	14.1	154	3910	1180	58	0.8	6.8	2.6
91DCP-477	WEBLI	Moon Lk	7	LG	407890	5141930	550	103	34					2650	800	84	0.47	3	0.83
91DCP-488	WEBLI	Moon Lk	7	LG	407805	5141740	530	530	93					808	196		0.06		
91DCP-505	WEBLI	Moon Lk	7	LG	407815	5141780	1040	215	62					710	270	12	0.04	1.1	0.86
91DCP-516	WEBLI	Moon Lk	7	LG	407945	5141965	1650	285	125					2460	520	32	0.31	3.1	0.41
91DCP-517	WEBLI	Moon Lk	7	LG	407945	5141965	2600	435	360					5030	2250	100	1.17	10.0	0.75
91DCP-522	WEBLI	Moon Lk	7	LG	407905	5141960	20	9	5					118	140	26	0.29	0.11	<0.05
91DCP-543	WEBLI	Moon Lk	7	LG	407985	5141970	3850	1090	450					3050	525	26	0.12	7.9	1.7
91DCP-545	WEBLI	Moon Lk	7	LG	408000	5141965	500	77	36					1150	600	44	0.24	1.7	0.18
91DCP-546	WEBLI	Moon Lk	7	LG	408005	5141970	1410	430	100					1350	575	42	0.23	2.4	0.35
91DCP-556	WEBLI	Parisien Lk	7	LG	409780	5141280	550	105	50					605	590	45	0.32	1.6	1.1
91DCP-557	WEBLI	Parisien Lk	7	LG	409780	5141280	1100	575	275					4500	850	88	1.05	7.7	3.3
91DCP-558	WEBLI	Parisien Lk	7	LG	409780	5141280	250	100	20					535	470	50	0.2	1	0.57
91DCP-559	WEBLI	Parisien Lk	7	LG	409780	5141280	560	170	50					1030	650	62	0.37	2.1	1.1
90DCP-331	EEBLI	Site 5	7	LG	412645	5142065	162	50	6					143	258	39	0.02		
91DCP-365	EEBLI	Nodule Pond	7	LG	420555	5139260	720	180	41					2980	868		0.63		
91DCP-366	EEBLI	Nodule Pond	7	LG	420565	5139200	10	30	2					198	105		0.07		
91DCP-367	EEBLI	Nodule Pond	7	LG	420617	5139270	170	60	22					1420	380		0.19		
91DCP-368	EEBLI	Nodule Pond	7	LG	420617	5139270	510	260	82					3260	1260		1.28		
91DCP-369	EEBLI	Nodule Pond	7	LG	420615	5139250	19	20	3					233	124		0.02		
91DCP-370	EEBLI	Nodule Pond	7	LG	420615	5139250	780	150	48					2770	847		0.61		
91DCP-371	EEBLI	Nodule Pond	7	LG	420615	5139250	540	90	29					1430	495		0.34		
91DCP-373	EEBLI	Nodule Pond	7	LG	420575	5139245	1400	340	88					6000	388		0.58		
91DCP-374	EEBLI	Nodule Pond	7	LG	420420	5139200	870	240	61					2720	828		0.65		
91DCP-381	EEBLI	Goulding Lk	7	LG	415591	5141259	15	12	<2					238	178	41	0.04	0.07	0.1
91DCP-383	EEBLI	Goulding Lk	7	LG	415196	5141225	120	24	<2					69	260	47	0.03	0.07	0.09
91DCP-405	EEBLI	Goulding Lk	7	LG	415723	5139369	1200	110	81					1765	7400	65	0.88	2.60	1.20
90DCP-326	EEBLI	Site 5	7	MG	412620	5142090	435	97	13		2.6		17.6	383	403	59	0.17	0.84	0.29
90DCP-296	EEBLI	Site 5	7	nA	412630	5142120	34	<1	10		1.7		<5	2050	88	36	0.32	1.40	0.10
90DCP-299	EEBLI	Site 5	7	nA	412625	5142115	82	3	3					174	61	19	0.03	0.15	0.12
90DCP-303	EEBLI	Site 5	7	nA	412600	5142135	390	80	20		3.3		19.8	428	53	19	0.05	0.41	0.15
91DCP-386	EEBLI	Goulding Lk	7	nA	415801	5140959	130	9	<2					97	147	34	0.07	0.36	<0.05
90DCP-315	EEBLI	Site 5	7	snG	412535	5142110	134	38	5					72	148	32	0.01		
90DCP-317	EEBLI	Site 5	7	snG	412530	5142100	395	75	9		2.7		13.4	91	149	30	0.02		
90DCP-319	EEBLI	Site 5	7	snG	412590	5142085	270	81	27		1.6		6.1	1610	617	80	0.4	1.77	1.5
90DCP-320	EEBLI	Site 5	7	snG	412595	5142090	81	18	6					197	177	33	0.03		
90DCP-325	EEBLI	Site 5	7	snG	412605	5142095	82	23	4					261	153	30	0.05	0.23	0.14
90DCP-327	EEBLI	Site 5	7	snG	412620	5142085	230	103	19		2.5		12	531	276	50	0.09		
90DCP-330	EEBLI	Site 5	7	snG	412635	5142100	185	40	11					323	253	39	0.09		
90DCP-337	EEBLI	Site 5	7	snG	412615	5142025	123	45	5					78	144	30	0.01		

APPENDIX 5, Part A (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Os	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-339	EEBLI	Site 5	7	snG	412590	5142010	23	17	4					198	138	27	0.02		
90DCP-340	EEBLI	Site 5	7	snG	412585	5142020	750	80	23		2.5		14	115	160	31	0.01		
91DCP-320	EEBLI	Nodule Pond	7	snG	420761	5139668	2	6	<2					173	200	44	0.02	0.06	<0.05
90DCP-312	EEBLI	Site 5	7	snG+qV	412570	5142130	540	165	800		2.8		20.2	2400	572	74	0.05	3.49	0.36
90DCP-233	WEBLI	Bull Lk	7	snLG	406240	5143890	47	32	14					344	209	32	0.03		
90DCP-360	WEBLI	Parisien Lk	7	snLG	410280	5141100	175	28	5					227	207	34	0.03		
90DCP-304	EEBLI	Site 5	7	snLG	412590	5142125	440	96	65		2.3		3.76	475	383	46	0.17		
90DCP-310	EEBLI	Site 5	7	snLG	412570	5142125	343	77	9					510	<5		0.13		
90DCP-329	EEBLI	Site 5	7	snLG	412635	5142090	53	51	7					355	127		nd		
90DCP-335	EEBLI	Site 5	7	snLG	412640	5142045	35	16	<2					173	108	24	0.03		
90DCP-336	EEBLI	Site 5	7	snLG	412635	5142025	110	14	<2					268	196	34	0.04		
91DCP-302	EEBLI	Nodule Pond	7	snLG	420063	5139965	2420	625	184	12.8	14.7	14	82.3	1240	200	26	0.22	1.90	0.23
91DCP-600	EEBLI	Goulding Lk	7	snLG	415010	5140970	1240	224	70.6	0.75	5.79	5.41	64	2190	1160		0.65		
91DCP-601	EEBLI	Goulding Lk	7	snLG	414985	5140880	500	90	27					1890	683		0.64		
91DCP-606	EEBLI	Goulding Lk	7	snLG	414640	5141660	280	110	58					2000	814		0.91		
91DCP-384	EEBLI	Goulding Lk	7	snvtLG	415089	5141218	1110	236	59.3	5.71	7.76	8.86	52.9	880	430	56	0.30	1.50	0.53
91DCP-092	WEBLI	DDH#EBL1	8	AGN	432.12		4.7	5.5	0.71		1.07	1.25		217	260	48	0.02		
90DCP-241	WEBLI	Moon Lk	8	G	406020	5143620	3	2	<2					232	192	38	0.02		
91DCP-099	WEBLI	DDH#EBL1	8	G	491.14		290	175	13.3		0.783	7.92		547	837	73	0.05	0.177	
91DCP-106	WEBLI	DDH#EBL1	8	G	526.57		88.3	45.2	15.7		1.05	4.32		300	362	46	0.02		
91DCP-428	WEBLI	Moon Lk	8	G	407555	5141770	55	17	19					195	430	89	0.04	0.17	<0.05
91DCP-393	EEBLI	South Lk	8	G	419862	5138795	132	93	7					308	215	41	0.04	0.16	0.37
91DCP-613	EEBLI	Sables R	8	G	410783	5138756	15	15	<2					147	88	48	0.03		
91DCP-096	WEBLI	DDH#EBL1	8	LG	479.38		113	54.5	13.1		0.941	6.55		163	134	21	0.03		
91DCP-421	WEBLI	Moon Lk	8	LG	407860	5140580	86	65	28					465	220	43	0.04	0.45	0.23
91DCP-422	WEBLI	Moon Lk	8	LG	407190	5141600	39	<10	3					620	375		0.88		
91DCP-423	WEBLI	Moon Lk	8	LG	407190	5141600	36	11	<2					675	590	104	2.08	15.0	0.21
91DCP-424	WEBLI	Moon Lk	8	LG	407190	5141600	46	15	<2					740	540	106	1.73	15.0	0.23
91DCP-426	WEBLI	Moon Lk	8	LG	407545	5141855	5	9	3					159	520	79	0.03	0.15	<0.05
91DCP-298	EEBLI	Nodule Pond	8	LG	419956	5139545	825	83	7					77	52	15	0.01		
91DCP-391	EEBLI	South Lk	8	LG	419780	5138765	7	6	50					505	115	44	0.07	0.71	<0.05
91DCP-394	EEBLI	South Lk	8	LG	419787	5138756	320	120	44					60	240	39	0.07	0.75	0.14
91DCP-107	WEBLI	DDH#EBL1	8	qG	611.65		10.3	16.3	1.44		0.331	0.54		180	241	65	0.01		
91DCP-108	WEBLI	DDH#EBL1	8	qG	612.11		6.5	24.2	6.02		0.057	1.03		181	182	55	0.02		
91DCP-109	WEBLI	DDH#EBL1	8	qLG	613.40		148	83.6	12.9		0.231	2.49		261	96	67	0.02	0.25	
91DCP-392	EEBLI	South Lk	8	vtG	419802	5138765	217	50	35					490	240	38	0.05	0.54	0.13

APPENDIX 5. Chalcophile Metal Abundances in Mafic and Ultramafic Rocks from the Bull Lake Area.

Part B. Analyses of sulphide-bearing rocks from the Main and Upper Series of the East Bull Lake intrusion.

Pd, Pt, Au, Ir, Ru and Rh abundances are in ppb; Cu, Ni, Co, Se and Bi are in ppm; S data are in wt%. Blanks indicate no determination was made.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-079B	WEBLI	DDH#EBL1	9	A	372.75		47.7	10.0	7.54	0.282	1.75		178	194	23	<0.01		
90DCP-198	WEBLI	Folson Lk	9	G	403740	5151060	32	33	2				203	81	57	0.01		
90DCP-199	WEBLI	Folson Lk	9	G	403830	5141140	14	23	<2				147	49	44	0.01		
90DCP-201	WEBLI	Folson Lk	9	G	403970	5141240	16	6	<2				222	50	51	0.02		
90DCP-202	WEBLI	Folson Lk	9	G	403860	5141260	160	30	5				382	69	63	0.03		
91DCP-173	EEBLI	Tiplady Lk	9	G	417866	5141196	11	9	6				150	111	46	0.02	0.26	<0.05
91DCP-234	EEBLI	Tiplady Lk	9	G	417870	5141065	5	9	4				146	81	44	0.02	0.16	<0.05
91DCP-288	EEBLI	Tiplady Lk	9	iG	418968	5140939	560	206	67				2330	540	78	0.33	3	0.68
91DCP-289	EEBLI	Tiplady Lk	9	iP	418972	5140928	240	39	56				2030	650	108	0.57	5	0.25
90DCP-420	WEBLI	Bull Lk	9	LG	408660	5142400	16	15	<2				152	114	29	0.01		
91DCP-175	EEBLI	Tiplady Lk	9	LG	417939	5141172	21	10	3				245	265	60	0.07	0.56	1.2
91DCP-184	EEBLI	Tiplady Lk	9	LG	418409	5141283	460	105	17				122	200	33	0.01		
91DCP-185	EEBLI	Tiplady Lk	9	LG	418420	5141276	100	84	<2				129	225	34	0.02		
91DCP-195	EEBLI	Novick Lk	9	LG	417728	5140951	13	4	4				170	45	30	<0.03	0.21	<0.05
91DCP-257	EEBLI	Tiplady Lk	9	LG	418271	5140770	3	3	5				166	184	40	0.04	0.23	<0.05
91DCP-266	EEBLI	Tiplady Lk	9	LG	418466	5141081	3	9	6				308	188	40	0.04	0.45	<0.05
91DCP-359	EEBLI	Novick Lk	9	LG	418558	5140235	3	<1	3				165	116	40	0.01		<0.05
91DCP-174	EEBLI	Tiplady Lk	9	MG	417942	5141187	27	47	5				390	1190	121	<0.01	2.8	0.11
91DCP-215	EEBLI	Novick Lk	9	MG	417872	5140778	12	9	<2				182	275	84	0.01		
90DCP-200	WEBLI	Folson Lk	9	OG	403940	5141200	46	50	7				154	109	62	0.01		
90DCP-419	WEBLI	Bull Lk	9	snLG	408750	5142280	38	33	5				149	113	29	0.01		
91DCP-356	EEBLI	Novick Lk	9	vtG	418467	5139988	7	2	3				285	131	49	<0.01	0.13	<0.05
91DCP-030	WEBLI	DDH#EBL1	10	OG	166.75		106	22.1	7.18	0.128	0.38		81	703	114	0.01		
91DCP-031	WEBLI	DDH#EBL1	10	OG	168.36		885	177	14.5	0.742	2.88		96	727	116	<0.01	0.14	
91DCP-034	WEBLI	DDH#EBL1	10	OG	181.84		409	137	3.74	0.332	2.91		75	793	137	<0.01	0.044	
91DCP-163	WEBLI	DDH#EBL2	10	OG	71.99		17.7	6.8	0.86	0.064	0.46		181	568	100	<0.01		
91DCP-168	WEBLI	DDH#EBL2	10	OG	45.83		91.7	30.3	6.43	0.044	0.19		343	586	101	0.06		
90DCP-134	WEBLI	Folson Lk	11	G	401680	5143080	17	29	13				272	68	48	0.06		
90DCP-135	WEBLI	Folson Lk	11	G	401790	5143050	12	18	<2				166	78	51	0.02		
90DCP-163	WEBLI	Folson Lk	11	G	401950	5142120	11	12	5				303	37	34	0.04		
90DCP-165	WEBLI	Folson Lk	11	G	402260	5142810	13	15	4				204	36	37	0.04		
90DCP-205	WEBLI	Folson Lk	11	G	403770	5141510	12	10	<2				156	38	35	0.01		
90DCP-216	WEBLI	Folson Lk	11	G	403360	5142360	23	26	5				201	56	51	0.02		
90DCP-217	WEBLI	Folson Lk	11	G	403460	5142350	16	13	<2				197	44	36	0.01		
90DCP-226	WEBLI	Folson Lk	11	G	402130	5142860	2	2	2				282	20	41	0.01		
91DCP-019	WEBLI	DDH#EBL1	11	G	88.58		47.2	35.3	10.1	0.033			187	153	58	0.01		
90DCP-166	WEBLI	Folson Lk	11	LG	404880	5143080	310	110	33				1520	507	45	0.36		
90DCP-169	WEBLI	Folson Lk	11	LG	404859	5143030	120	36	5				334	503	48	0.02		
90DCP-191	WEBLI	Folson Lk	11	LG	403370	5141930	31	24	4				196	33	37	0.02		
90DCP-193	WEBLI	Folson Lk	11	LG	403300	5142100	19	16	4				271	40	46	0.02		
90DCP-224	WEBLI	Folson Lk	11	LG	402280	5142840	14	15	<2				237	46	42	0.02		
90DCP-162	WEBLI	Folson Lk	11	MG	401950	5142200	15	14	2				156	45	39	0.02		
90DCP-225	WEBLI	Folson Lk	11	MG	402160	5142790	<1	<1	<2				278	24	54	0.02		
91DCP-015	WEBLI	DDH#EBL1	12	G	71.80		8.9	13.7	16.4	0.042	0.52		258	143	60	0.04		
91DCP-017	WEBLI	DDH#EBL1	12	G	82.95		56.8	46.7	1.14	0.108	0.12		335	137	73	0.15		

APPENDIX 5, Part B (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-242	EEBLI	Novick Lk	12	G	418090	5140833	43	48	<2				71	120	40	0.01		
91DCP-245	EEBLI	Novick Lk	12	iP	418171	5140798	9	24	4				188	200	67	0.01		
91DCP-018	WEBLI	DDH#EBL1	12	MG	85.70		105	125	22.5	0.017			513	581	115	0.12	0.317	
90DCP-117	WEBLI	Folson Lk	12	vtG	401130	5142670	15	10	<2				154	70	44	0.01		
90DCP-128	WEBLI	Folson Lk	12	vtG	401470	5142940	17	19	3				225	53	49	0.03		
90DCP-161	WEBLI	Folson Lk	12	vtG	401920	5142280	18	20	5				198	55	40	0.04		
90DCP-197	WEBLI	Folson Lk	12	vtG	403780	5140980	17	9	<2				153	75	47	0.04		
91DCP-333	EEBLI	Tiplady Lk	12	vtG	419134	5140553	4	9	<2				206	94	31	0.04		
91DCP-363	EEBLI	South Lk	13	A	418077	5138998	560	218	60				1910	5800	42	0.23	2.4	1.2
90DCP-121	WEBLI	Folson Lk	13	G	401310	5142750	10	15	3				203	40	41	0.03		
90DCP-123	WEBLI	Folson Lk	13	G	401280	5142980	17	18	2				183	54	42	0.02		
90DCP-124	WEBLI	Folson Lk	13	G	401420	5142810	15	15	<2				149	45	41	0.02		
90DCP-127	WEBLI	Folson Lk	13	G	401440	5142880	10	9	3				150	41	37	0.02		
90DCP-129	WEBLI	Folson Lk	13	G	401470	5142990	17	19	<2				185	56	47	0.07		
90DCP-141	WEBLI	Folson Lk	13	G	402320	5141420	12	11	7				137	60	47	0.09		
90DCP-142	WEBLI	Folson Lk	13	G	402320	5141420	11	8	4				138	56	46	0.09		
90DCP-150	WEBLI	Folson Lk	13	G	401840	5141960	16	16	<2				175	42	41	0.02		
90DCP-152	WEBLI	Folson Lk	13	G	401670	5142120	26	20	61				352	70	46	0.05	0.87	0.09
90DCP-153	WEBLI	Folson Lk	13	G	401670	5142120	13	11	38				432	72	43	0.04		
90DCP-155	WEBLI	Folson Lk	13	G	401600	5142250	26	33	7				307	46	39	0.03	0.34	0.13
90DCP-156	WEBLI	Folson Lk	13	G	401550	5142300	14	16	2				283	61	46	0.04		
90DCP-188	WEBLI	Folson Lk	13	G	402160	5141970	17	16	3				178	49	44	0.01		
90DCP-195	WEBLI	Folson Lk	13	G	403790	5140930	17	10	15				426	69	45	0.10		
90DCP-227	WEBLI	Folson Lk	13	G	402110	5142900	70	75	3				191	48	45	0.01		
90DCP-228	WEBLI	Folson Lk	13	G	402170	5142950	26	27	<2				224	55	51	0.08		
91DCP-362	EEBLI	South Lk	13	iP	418057	5139013	27	90	50				295	250	60	0.02	0.66	0.62
91DCP-361	EEBLI	South Lk	13	qG	418039	5139021	82	93	21				258	185	47	0.01	0.18	0.35

APPENDIX 5. Chalcophile Metal Abundances in Mafic and Ultramafic Rocks from the Bull Lake Area.

Part C. Analyses of samples from the East Bull Lake intrusion containing <0.05% S or no visible sulphides.

Pd, Pt, Au, Ir, Ru and Rh abundances are in ppb; Cu, Ni, Co, Se and Bi are in ppm; S data are in wt%. Blanks indicate no determination was made.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-287	WEBLI	Moon Lk	4	G	407990	5141610	57	<1	3				66	238	36	0.04		
91DCP-172	WEBLI	DDH#EBL2	4	G	790.50		120	6.2	1.54	0.047	0.51		65	300	58	0.02		
91DCP-173	WEBLI	DDH#EBL2	4	G	794.80		34.4	18.9	4.11	0.297	0.39		123	287	59	0.02		
91DCP-177	WEBLI	DDH#EBL2	4	G	812.12		1.4	2.8	1.19	0.036	0.18		60	154	54	<0.01		
91DCP-178	WEBLI	DDH#EBL2	4	G	813.30		11.7	14.2	1.42	0.129	0.33		56	146	49	0.04		
90DCP-075	WEBLI	Moon Lk	4	Hybrid	407630	5144380	9	<1	<2				31	36	14	0.01		
90DCP-077	WEBLI	Moon Lk	4	Hybrid	407520	5144260	<1	<1	<2				20	17	10	<0.01		
90DCP-078	WEBLI	Moon Lk	4	Hybrid	407530	5144260	<1	<1	<2				43	22	14	0.01		
90DCP-214	WEBLI	Folson Lk	4	Hybrid	403290	5143480	<1	<1	<2				10	25	9	0.01		
90DCP-402	WEBLI	Moon Lk	4	Hybrid	408660	5141820	<1	<1	<2				31	15	7	0.01		
90DCP-362	WEBLI	Moon Lk	4	qG	408210	5141870	<1	<1	<2				159	58	26	0.05		
90DCP-383	WEBLI	Parisien Lk	4	qG	409070	5141550	<1	<1	<2				48	62	27	0.01		
91DCP-158	WEBLI	Moon Lk	4	qG	408300	5141400	<1	<1	<2				11	71	26	<0.01		
90DCP-379	WEBLI	DDH#EBL2	4	qLG	786.85		47.6	19.1	1.74	0.614			49	99	31	0.01		
91DCP-171	WEBLI	DDH#EBL2	4	qLG	798.08		30.8	33.4	5.99	0.067	0.72		53	131	52	0.01	0.177	
90DCP-076	WEBLI	Moon Lk	4	T	407630	5144380	1	<1	<2				26	16	7	<0.01		
90DCP-271	WEBLI	Moon Lk	4	T	408170	5141240	<1	<1	<2				7	7	3	<0.01		
90DCP-368	WEBLI	Moon Lk	4	T	408160	5141810	<1	<1	<2				22	18	8	<0.01		
90DCP-403	WEBLI	Parisien Lk	4	T	409070	5141550	<1	<1	<2				41	6	3	<0.01		
91DCP-148	WEBLI	DDH#EBL1	4	T	777.71		3.9	1.7	0.41	0.066	0.21		1	<1	19	<0.01		
91DCP-150	WEBLI	DDH#EBL1	4	T	794.40		0.4	2.5	0.28	0.005	0.22		21	1	21	<0.01		
91DCP-151	WEBLI	DDH#EBL1	4	T	796.57		<0.55	2.3	0.40	0.003	0.21		1	1	31	<0.01		
91DCP-153	WEBLI	DDH#EBL1	4	T	804.02		0.6	2.5	0.49	0.019	0.02		1	1	28	<0.01		
91DCP-154	WEBLI	DDH#EBL1	4	T	813.33		<0.38	5.6	0.28	0.004	0.11		6	5	50	<0.01		
91DCP-156	WEBLI	DDH#EBL1	4	T	820.20		0.4	2.0	0.49	0.006	0.12		1	<1	31	<0.01		
90DCP-038	WEBLI	Moon Lk	7	A	408460	5141950	18	7	<2				18	112	23	0.01		
90DCP-046	WEBLI	Bull Lk	7	A	406250	5144010	11	7	<2				33	122	30	0.01		
90DCP-235	WEBLI	Bull Lk	7	A	406180	5144050	5	5	<2				56	43	13	0.01		
90DCP-236	WEBLI	Parisien Lk	7	A	409260	5141610	<1	4	<2				61	34	15	0.01		
90DCP-400	EEBLI	Nodule Pond	7	A	420069	5139951	3	2	<2				59	63	14	0.03		
91DCP-301	EEBLI	South Lk	7	A	419341	5139262	14	2	<2				33	81	22	0.01		
90DCP-044	WEBLI	Bull Lk	7	G	407660	5144280	3	14	<2				63	471	56	0.01		
90DCP-074	WEBLI	Bull Lk	7	G	407600	5144000	14	3	<2				61	157	41	0.01		
90DCP-081	WEBLI	Bull Lk	7	G	406080	5143770	11	12	2				52	425	67	0.01		
90DCP-239	WEBLI	Bull Lk	7	G	406050	5143690	5	<1	6				68	235	42	0.01		
90DCP-321	WEBLI	DDH#EBL1	7	G	742.22		67.3	17.9	2.59	0.159	2.47		74	316	71	0.01		
91DCP-138	WEBLI	DDH#EBL1	7	G	731.79		18.8	11.4	1.25	0.049	0.61		92	224	52	0.02		
91DCP-406	WEBLI	Moon Lk	7	G	407970	5140630	5	12	<2				36	190	39	0.01		
90DCP-240	EEBLI	Site 5	7	G	412600	5142080	1	6	<2				111	227	49	0.04		
90DCP-073	WEBLI	Bull Lk	7	LG	406220	5143910	13	4	<2				77	421	45	0.01		
90DCP-234	WEBLI	Bull Lk	7	LG	406120	5143910	4	3	2				79	285	52	0.01		
90DCP-238	WEBLI	Moon Lk	7	LG	407790	5142030	3	7	<2				52	240	39	0.01		
90DCP-392	WEBLI	Moon Lk	7	LG	407740	5141990	<1	8	<2				32	247	41	0.01		
91DCP-111	WEBLI	DDH#EBL1	7	LG	657.72		26.3	8.1	1.22	0.541	5.55		62	96	25	0.01		
91DCP-119	WEBLI	DDH#EBL1	7	LG	689.25		4.2	2.9	0.40	0.054	0.52		49	42	20	<0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-124	WEBLI	DDH#EBL1	7	LG	719.45		9.8	9.9	1.65	1.92	3.38		48	60	19	0.02	0.031	
91DCP-126	WEBLI	DDH#EBL1	7	LG	712.68		9.7	12.4	0.84	2.15	3.63		49	88	26	<0.01		
91DCP-132	WEBLI	DDH#EBL1	7	LG	720.30		22.5	17.2	1.09	0.552	3.41		75	172	50	<0.01		
91DCP-133	WEBLI	Bull Lk	7	LG	407700	5144200	8	4	<2				62	128	32	0.01		
91DCP-134	WEBLI	DDH#EBL1	7	LG	726.75		12.2	8.9	0.97	0.114	1.31		26	132	33	<0.01		
91DCP-135	WEBLI	DDH#EBL1	7	LG	738.98		11.4	8.2	1.16	0.208	1.51		82	229	42	<0.01	0.048	
91DCP-137	WEBLI	DDH#EBL1	7	LG	758.53		33.4	33.6	4.93	0.169	1.78		119	185	38	<0.01		
91DCP-141A	WEBLI	DDH#EBL1	7	LG	754.13		64.1	26.3	2.17	0.359	2.02		87	157	41	<0.01		
91DCP-141B	WEBLI	DDH#EBL1	7	LG	762.15		55.1	25.4	1.56	0.628	2.26		79	131	34	0.01		
91DCP-389	WEBLI	DDH#EBL1	7	LG	695.05		6.4	7.1	1.29	1.26	6.46		140	99	31	<0.01		
91DCP-404	WEBLI	Moon Lk	7	LG	407785	5141910	20	4	3				120	73	18	0.03	0.09	<0.05
92DCP-136	WEBLI	DDH#EBL1	7	LG	623.24		47.1	24.4	1.91	0.247	5.44		73	83	28	<0.01		
90DCP-393	EEBLI	Nodule Pond	7	LG	420155	5139518	18	5	3				110	100	33	0.03		
91DCP-297	EEBLI	Nodule Pond	7	LG	419996	5139915	18	16	<2				67	76	23	0.04		
91DCP-299	EEBLI	Goulding Lk	7	LG	415764	5139335	11	14	<2				32	405	41	0.01		
91DCP-478	EEBLI	Site 5	7	MG	412600	5142045	32	50	4				89	147	38	0.02		
90DCP-291	EEBLI	Site 5	7	nA	412635	5142115	29	21	11				20	59	17	0.01	0.02	0.13
90DCP-292	EEBLI	Site 5	7	nA	412580	5142140	3	6	<2				20	48	17	0.01		
90DCP-297	EEBLI	Site 5	7	nA	412660	5142120	52	11	<2				119	42	18	0.02		
90DCP-298	EEBLI	Site 5	7	nA	412660	5142120	4	5	2				47	36	16	0.02	0.04	0.06
90DCP-307	EEBLI	Site 5	7	nA	412575	5142140	24	6	<2				104	61	18	0.02		
90DCP-309	EEBLI	Nodule Pond	7	nA	420195	5140034	6	6	<2				44	59	26	0.01	0.03	0.33
90DCP-332	EEBLI	Goulding Lk	7	nA	416155	5141026	6	7	<2				105	64	26	0.02	0.18	<0.05
91DCP-303	EEBLI	Nodule Pond	7	nA	420619	5139768	5	7	<2				67	66	20	0.04		
91DCP-316	EEBLI	Nodule Pond	7	nA	420562	5139783	5	18	<2				88	87	30	0.03	0.07	<0.05
91DCP-319	EEBLI	Nodule Pond	7	nA	420683	5139640	2	3	<2				33	47	23	0.02	0.03	<0.05
91DCP-321	EEBLI	Goulding Lk	7	nA	416141	5141011	9	8	<2				98	73	27	0.03		
91DCP-376	EEBLI	Goulding Lk	7	nA	415733	5141074	7	12	<2				52	175	38	0.01	0.05	<0.05
91DCP-377	EEBLI	Goulding Lk	7	nA	415750	5141219	14	7	<2				79	225	46	0.02	0.07	<0.05
91DCP-379	EEBLI	Goulding Lk	7	nA	415332	5141166	5	5	3				52	44	17	0.02	0.04	<0.05
91DCP-380	EEBLI	Site 5	7	nA	412625	5142110	1	1	<2				43	77	20	0.01		
91DCP-504	WEBLI	DDH#EBL1	7	qLG	745.17		98.6	28.1	4.72	0.165	2.37		71	99	38	0.01		
91DCP-139	EEBLI	Novick Lk	7	snA	418086	5140801	24	11	5				138	78	34	0.01	0.22	<0.05
91DCP-240	EEBLI	Novick Lk	7	snA	418088	5140801	16	12	4				116	76	33	0.01	0.15	<0.05
91DCP-241	EEBLI	Novick Lk	7	snA	418096	5140775	14	9	<2				60	69	34	0.01		<0.05
91DCP-243	EEBLI	Tiplady Lk	7	snA	418669	5140736	6	10	<2				38	121	30	0.01	0.27	<0.05
90DCP-313	EEBLI	Site 5	7	snG	412535	5142130	21	9	<2				122	143	32	0.03		
90DCP-314	EEBLI	Site 5	7	snG	412555	5142085	15	15	<2				128	152	33	0.02		
90DCP-318	EEBLI	Novick Lk	7	snG	418151	5140788	8	11	<2				48	48	27	0.01	0.14	<0.05
91DCP-275	EEBLI	Site 5	7	snG	412535	5142130	56	19	<2				126	139	31	0.03		
90DCP-045	WEBLI	Parisien Lk	7	snLG	410410	5141100	47	12	<2				77	79	18	0.01		
91DCP-244	WEBLI	Moon Lk	7	snLG	408040	5140695	11	5	2				86	110	30	0.02		
90DCP-361	EEBLI	South Lk	7	snLG	419429	5139743	8	6	<2				49	70	20	0.02		
91DCP-309	EEBLI	Sables R	7	snLG	411347	5145880	30	7	4				109	69	22	0.02		
91DCP-382	WEBLI	Moon Lk	7	vIG	407815	5141790	17	6	7				129	640	88	0.04	0.15	<0.05
91DCP-142	EEBLI	Goulding Lk	7	vIG	415723	5139369	33	5	3				91	103	45	0.02	0.12	<0.05
91DCP-614	WEBLI	Parisien Lk	7	vILG	410140	5141100	68	8	<2				45	138	32	0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-174	EEBLI	South Lk.	8	A	419736	5139682	6	4	<2				25	25	10	0.01		
90DCP-039	WEBLI	Bull Lk.	8	G	409800	5142950	7	7	<2				28	102	29	0.01		
90DCP-040	WEBLI	Bull Lk.	8	G	409910	5142910	14	10	<2				75	128	38	0.01		
90DCP-041	WEBLI	Bull Lk.	8	G	407780	5143890	16	20	<2				59	515	94	0.01		
90DCP-070	WEBLI	Bull Lk.	8	G	407780	5143960	7	3	<2				25	99	25	0.01		
90DCP-071	WEBLI	Moon Lk.	8	G	406210	5143740	10	8	<2				52	414	69	0.01		
90DCP-231	WEBLI	Moon Lk.	8	G	406230	5143820	1	4	<2				42	160	28	0.01		
90DCP-232	WEBLI	Bull Lk.	8	G	409920	5143600	7	6	<2				114	128	42	0.04		
90DCP-262	WEBLI	Bull Lk.	8	G	409850	5143570	6	2	<2				37	112	32	0.01		
90DCP-265	WEBLI	Bull Lk.	8	G	410300	5143090	15	17	<2				36	137	43	0.01		
90DCP-268	WEBLI	Bull Lk.	8	G	410650	5143140	11	41	<2				52	113	35	0.01		
90DCP-269	WEBLI	Parisien Lk.	8	G	408960	5141760	8	9	<2				69	567	90	0.01		
90DCP-397	WEBLI	Parisien Lk.	8	G	409180	5141700	3	5	<2				52	165	35	0.01		
90DCP-398	WEBLI	Parisien Lk.	8	G	409220	5141640	6	6	<2				47	324	61	0.01		
90DCP-399	WEBLI	Bull Lk.	8	G	409890	5142340	14	9	<2				36	142	36	0.01		
90DCP-415	WEBLI	Bull Lk.	8	G	409610	5143010	9	3	<2				32	100	28	<0.01		
90DCP-416	WEBLI	Bull Lk.	8	G	409950	5142290	18	13	<2				80	226	52	0.01		
90DCP-417	WEBLI	Bull Lk.	8	G	409950	5142320	<1	<1	<2				60	232	46	<0.01		
90DCP-418	WEBLI	Bull Lk.	8	G	407800	5143510	12	2	<2				78	250	42	0.02		
91DCP-103	WEBLI	Bull Lk.	8	G	409700	5142990	8	2	<2				78	137	34	0.01		
91DCP-295	WEBLI	Moon Lk.	8	G	407460	5141585	8	15	14				64	420	86	0.02	0.06	<0.05
90DCP-424	EEBLI	Nodule Pond	8	G	420285	5139691	8	6	<2				63	196	44	0.03	0.14	<0.05
91DCP-427	EEBLI	South Lk.	8	iP	419435	5139751	<1	6	<2				84	147	52	0.03	0.13	<0.05
90DCP-072	WEBLI	Bull Lk.	8	LG	410310	5143150	7	9	<2				46	99	30	0.01		
90DCP-266	WEBLI	Bull Lk.	8	LG	410300	5143150	14	6	<2				144	77	39	0.04		
90DCP-267	WEBLI	Bull Lk.	8	LG	410720	5143020	6	30	<2				103	82	30	0.01		
91DCP-093	WEBLI	DDH#EBL1	8	LG	489.04		118	29.6	2.63	0.797	2.81		103	153	39	<0.01		
91DCP-094	WEBLI	DDH#EBL1	8	LG	448.86		17.9	30.6	0.38	0.977	3.01		26	58	35	<0.01	0.046	
91DCP-095	WEBLI	DDH#EBL1	8	LG	482.65		24.9	31.7	1.04	0.609	7.61		38	73	23	<0.01		
91DCP-097	WEBLI	DDH#EBL1	8	LG	498.05		37.8	22.1	2.31	0.137	1.99		138	280	49	<0.01		
91DCP-098	WEBLI	DDH#EBL1	8	LG	496.45		45.1	17.2	1.59	0.713	7.69		40	210	36	<0.01		
91DCP-100	WEBLI	DDH#EBL1	8	LG	504.96		7.3	5.8	1.35	0.318	10.2		46	185	38	<0.01		
91DCP-101	WEBLI	DDH#EBL1	8	LG	516.90		8.7	16.5	7.53	0.305	1.91		110	43	16	0.03		
91DCP-102	WEBLI	DDH#EBL1	8	LG	508.69		4.4	8.4	2.94	0.073	1.41		83	109	25	0.01		
91DCP-104	WEBLI	DDH#EBL1	8	LG	523.10		64.3	27.8	3.41	0.261	3.29		52	151	27	<0.01	0.055	
91DCP-105	WEBLI	Bull Lk.	8	LG	407780	5144090	24	5	<2				11	120	33	<0.01		
91DCP-311	WEBLI	DDH#EBL1	8	LG	437.57		4.3	3.1	0.57	1.28	2.03		38	188	37	<0.01		
91DCP-390	WEBLI	Moon Lk.	8	LG	407565	5141945	10	14	<2				46	320	59	0.03	0.12	<0.05
91DCP-425	WEBLI	Moon Lk.	8	LG	407515	5141800	18	46	4				32	510	86	0.02	0.03	0.08
91DCP-429	WEBLI	DDH#EBL1	8	LG	443.47		3.1	6.5	1.36	2.35	1.21		56	39	21	<0.01		
90DCP-270	EEBLI	Nodule Pond	8	LG	420326	5139876	9	11	<2				60	141	35	0.01		
91DCP-292	EEBLI	Nodule Pond	8	LG	420361	5139810	11	3	<2				31	400	62	0.01		
91DCP-293	EEBLI	Nodule Pond	8	LG	419876	5139996	8	19	<2				85	46	21	0.01	0.08	<0.05
91DCP-306	EEBLI	South Lk.	8	LG	419584	5139723	55	9	<2				64	205	45	0.02	0.15	<0.05
91DCP-307	EEBLI	Nodule Pond	8	LG	420567	5139732	15	9	<2				29	89	37	0.01		
91DCP-318	EEBLI	South Lk.	8	LG	419707	5138783	20	8	3				114	79	27	0.02		
91DCP-308	WEBLI	Bull Lk.	8	snLG	409780	5142410	6	3	<2				52	108	26	0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-232	EEBLI	Tiplady Lk.	9	A	418955	5140921	30	16	<2				97	163	31	0.01		
90DCP-035	WEBLI	Bull Lk.	9	G	408040	5144630	13	10	<2				98	86	42	0.02		
90DCP-037	WEBLI	Bull Lk.	9	G	409580	5143030	1	7	7				109	139	33	0.03		
90DCP-042	WEBLI	Moon Lk.	9	G	407220	5143020	3	8	4				58	112	27	0.01		
90DCP-053	WEBLI	Moon Lk.	9	G	407190	5143000	2	2	<2				64	104	23	0.01		
90DCP-054	WEBLI	Moon Lk.	9	G	407180	5142910	5	8	<2				21	189	38	<0.01		
90DCP-056	WEBLI	Moon Lk.	9	G	407130	5142850	4	5	<2				26	195	35	0.01		
90DCP-057	WEBLI	Bull Lk.	9	G	406230	5143520	23	5	<2				49	486	76	0.01		
90DCP-229	WEBLI	Bull Lk.	9	G	406210	5143610	6	7	<2				55	256	44	0.01		
90DCP-230	WEBLI	Moon Lk.	9	G	407660	5143270	10	5	<2				58	318	57	0.01		
90DCP-242	WEBLI	Moon Lk.	9	G	407620	5143140	11	11	<2				57	291	48	0.01		
90DCP-243	WEBLI	Moon Lk.	9	G	407600	5143080	<1	<1	3				103	100	17	0.01		
90DCP-244	WEBLI	Moon Lk.	9	G	407570	5142920	7	6	<2				65	263	41	0.01		
90DCP-245	WEBLI	Moon Lk.	9	G	407530	5142820	5	5	<2				54	448	67	0.01		
90DCP-246	WEBLI	Moon Lk.	9	G	407510	5142720	9	7	<2				39	362	61	0.01		
90DCP-247	WEBLI	Moon Lk.	9	G	406020	5143340	5	6	<2				79	589	100	0.01		
90DCP-248	WEBLI	Moon Lk.	9	G	408020	5142220	19	8	<2				46	217	38	0.01		
90DCP-388	WEBLI	Moon Lk.	9	G	407980	5142180	5	5	<2				84	252	35	0.01		
90DCP-389	WEBLI	Bull Lk.	9	G	409600	5142460	3	2	<2				127	89	22	0.02		
90DCP-413	WEBLI	Bull Lk.	9	G	408760	5142830	14	9	<2				55	151	29	0.01		
90DCP-421	WEBLI	Moon Lk.	9	G	408100	5142990	6	7	<2				31	128	30	0.01		
90DCP-427	WEBLI	Moon Lk.	9	G	408090	5142770	5	7	<2				101	158	32	0.01		
91DCP-051	WEBLI	DDH#EBL1	9	G	330.95		22.3	116	29.2	0.101			98	355	66	0.05	0.149	
91DCP-067	WEBLI	DDH#EBL1	9	G	334.53		16.8	30.2	4.34	0.051			105	434	75	<0.01		
91DCP-069	WEBLI	DDH#EBL1	9	G	341.81		8.9	10.9	2.34	0.181	0.46		116	259	50	0.02		
91DCP-071	WEBLI	DDH#EBL1	9	G	349.89		9.9	6.2	1.38	0.197			122	328	50	0.03		
91DCP-073	WEBLI	DDH#EBL1	9	G	352.43		11.3	7.3	1.47	0.314			46	545	81	0.02		
91DCP-074	WEBLI	DDH#EBL1	9	G	364.79		25.8	8.8	0.75	0.264	0.73		35	257	59	<0.01		
91DCP-082	WEBLI	DDH#EBL1	9	G	255.11		11.9	9.3	0.75	0.123			54	220	43	<0.01		
91DCP-091	WEBLI	Bull Lk.	9	G	407970	5144640	19	8	<2				111	95	37	0.01		
90DCP-428	EEBLI	Tiplady Lk.	9	G	417613	5141366	9	9	<2				120	99	43	0.01	0.14	<0.05
91DCP-170	EEBLI	Tiplady Lk.	9	G	417770	5141191	8	16	<2				111	75	32	0.02		
91DCP-171	EEBLI	Tiplady Lk.	9	G	418161	5141185	6	7	<2				22	320	64	0.01		
91DCP-178	EEBLI	Novick Lk.	9	G	417749	5140991	11	12	3				80	73	44	0.02	0.08	<0.05
91DCP-194	EEBLI	Novick Lk.	9	G	417708	5140929	9	8	<2				106	49	29	0.01		
91DCP-196	EEBLI	Novick Lk.	9	G	417671	5140914	7	3	<2				26	68	36	0.01		
91DCP-197	EEBLI	Novick Lk.	9	G	417545	5140263	9	12	<2				53	97	46	0.01	0.03	<0.05
91DCP-198	EEBLI	Tiplady Lk.	9	G	417297	5141289	8	8	<2				69	94	49	<0.01		
91DCP-205	EEBLI	Novick Lk.	9	G	417881	5140792	12	12	<2				86	102	42	0.01	0.09	<0.05
91DCP-216	EEBLI	Tiplady Lk.	9	G	417322	5141530	8	10	<2				29	67	40	0.02		
91DCP-220	EEBLI	Tiplady Lk.	9	G	417406	5141395	10	10	<2				62	85	39	0.01		
91DCP-221	EEBLI	Tiplady Lk.	9	G	417328	5141390	7	8	<2				57	89	49	0.01		
91DCP-222	EEBLI	Tiplady Lk.	9	G	417244	5141300	6	3	<2				11	70	37	<0.01		
91DCP-223	EEBLI	Novick Lk.	9	G	417664	5141017	7	9	<2				108	72	43	0.02		
91DCP-224	EEBLI	Novick Lk.	9	G	417607	5140914	18	21	<2				71	68	46	0.01		
91DCP-226	EEBLI	Novick Lk.	9	G	417502	5140969	7	9	<2				74	106	49	0.01		
91DCP-228	EEBLI	Tiplady Lk.	9	G	417798	5141103	16	16	5				128	72	43	0.02	0.24	<0.05

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-233	EEBLI	Tiplady Lk.	9	G	418042	5140992	11	13	<2				46	112	42	0.02		
91DCP-237	EEBLI	Tiplady Lk.	9	G	418021	5140968	4	15	7				107	108	46	0.02	0.07	<0.05
91DCP-238	EEBLI	Tiplady Lk.	9	G	418283	5140832	6	2	<2				32	295	64	0.01		
91DCP-253	EEBLI	Tiplady Lk.	9	G	418365	5140719	4	5	<2				67	161	34	0.02	0.09	<0.05
91DCP-258	EEBLI	Tiplady Lk.	9	G	418415	5140728	3	3	<2				27	119	26	0.01		
91DCP-259	EEBLI	Tiplady Lk.	9	G	418414	5140933	3	<1	<2				51	203	81	0.02	0.07	<0.05
91DCP-261	EEBLI	Tiplady Lk.	9	G	418418	5141158	8	10	<2				77	245	52	0.01		
91DCP-263	EEBLI	Tiplady Lk.	9	G	418533	5141190	4	4	<2				44	191	45	0.01		
91DCP-264	EEBLI	Tiplady Lk.	9	G	418566	5140575	9	2	4				119	92	43	0.01		<0.05
91DCP-268	EEBLI	Tiplady Lk.	9	G	418674	5140561	8	9	<2				80	95	40	0.01	0.08	<0.05
91DCP-269	EEBLI	Tiplady Lk.	9	G	418623	5140693	6	2	<2				24	245	50	0.01		
91DCP-270	EEBLI	Tiplady Lk.	9	G	418516	5140811	3	<1	<2				71	210	41	0.01		
91DCP-271	EEBLI	Tiplady Lk.	9	G	418704	5141027	10	9	<2				66	230	51	0.02		
91DCP-273	EEBLI	Tiplady Lk.	9	G	418655	5140877	7	11	<2				111	120	47	0.01	0.12	<0.05
91DCP-274	EEBLI	Tiplady Lk.	9	G	418769	5140658	4	6	<2				50	180	47	0.02		
91DCP-276	EEBLI	Novick Lk.	9	G	418237	5140394	<1	18	<2				97	68	33	0.03		
91DCP-287	EEBLI	Novick Lk.	9	G	417696	5140635	5	6	<2				50	81	41	0.01		
91DCP-323	EEBLI	Novick Lk.	9	G	418391	5140494	14	19	<2				109	87	37	0.02		
91DCP-324	EEBLI	Novick Lk.	9	G	418279	5140164	10	10	<2				120	97	43	0.02	0.18	<0.05
91DCP-326	EEBLI	Novick Lk.	9	G	418098	5140045	11	14	<2				122	110	45	0.02	0.08	<0.05
91DCP-327	EEBLI	Novick Lk.	9	G	418119	5140142	5	8	<2				90	63	32	0.01		
91DCP-328	EEBLI	Novick Lk.	9	G	417985	5140321	8	11	<2				73	59	29	0.01		
91DCP-329	EEBLI	Tiplady Lk.	9	G	418515	5140544	9	7	<2				112	88	37	0.01		
91DCP-330	EEBLI	Novick Lk.	9	G	417971	5139749	13	14	<2				91	71	36	0.01		
91DCP-343	EEBLI	Novick Lk.	9	G	417879	5139753	11	14	<2				100	72	42	0.01		
91DCP-344	EEBLI	South Lk.	9	G	418593	5139669	7	5	<2				23	240	44	0.01		
91DCP-354	EEBLI	Novick Lk.	9	G	418394	5139750	30	7	<2				39	280	62	<0.01		
91DCP-355	EEBLI	Novick Lk.	9	G	418693	5140060	10	9	<2				143	81	39	0.01	0.11	<0.05
90DCP-036	WEBLI	Moon Lk.	9	LG	408060	5142270	5	3	<2				30	104	25	0.01		
90DCP-359	WEBLI	DDH#EBL1	9	LG	377.75		1.9	1.8	0.50	0.162	2.62		26	85	19	<0.01		
90DCP-387	WEBLI	Moon Lk.	9	LG	407900	5142170	12	9	<2				26	134	28	0.01		
90DCP-390	WEBLI	Moon Lk.	9	LG	407800	5142100	3	9	<2				74	162	28	0.01		
90DCP-391	WEBLI	Bull Lk.	9	LG	409550	5142510	5	7	<2				66	256	44	0.01		
90DCP-412	WEBLI	Bull Lk.	9	LG	409640	5142440	4	6	<2				37	171	35	<0.01		
90DCP-414	WEBLI	Moon Lk.	9	LG	408460	5143050	5	7	<2				23	120	23	<0.01		
90DCP-422	WEBLI	Moon Lk.	9	LG	407720	5143340	13	10	<2				135	128	30	0.02		
90DCP-425	WEBLI	Moon Lk.	9	LG	407650	5143250	6	6	3				26	196	40	0.01		
91DCP-047	WEBLI	DDH#EBL1	9	LG	242.62		12.9	6.7	0.56	0.064	0.86		61	194	40	<0.01		
91DCP-048	WEBLI	DDH#EBL1	9	LG	250.55		9.1	7.2	1.01	0.071	1.23		42	203	40	<0.01		
91DCP-049	WEBLI	DDH#EBL1	9	LG	374.49		14.8	4.6	0.56	0.106	1.82		30	160	29	<0.01		
91DCP-050	WEBLI	DDH#EBL1	9	LG	257.41		8.8	9.1	1.43	0.017	0.37		53	182	39	0.01		
91DCP-052	WEBLI	DDH#EBL1	9	LG	261.68		5.0	7.6	1.26	0.089	0.13		89	102	34	<0.01	0.072	
91DCP-053	WEBLI	DDH#EBL1	9	LG	265.78		41.1	5.3	0.68	0.149	0.32		42	130	41	0.01		
91DCP-054	WEBLI	DDH#EBL1	9	LG	267.60		39.8	7.6	0.64	0.021			42	126	43	0.01		
91DCP-055	WEBLI	DDH#EBL1	9	LG	333.15		9.8	4.5	1.31	0.071			40	154	40	0.02		
91DCP-068	WEBLI	DDH#EBL1	9	LG	337.60		9.3	5.1	2.17	0.143			81	136	38	0.01		
91DCP-070	WEBLI	DDH#EBL1	9	LG	345.28		10.9	11.8	2.16	0.161	0.22		66	140	33	<0.01.		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-072	WEBLI	DDH#EBL1	9	LG	356.21		13.2	13.1	1.87	0.072			92	130	44	0.01		
91DCP-075	WEBLI	DDH#EBL1	9	LG	360.08		10.0	8.5	2.19	0.187	0.28		154	129	38	0.03		
91DCP-076	WEBLI	DDH#EBL1	9	LG	367.99		9.8	5.5	0.54	0.424			79	110	37	<0.01		
91DCP-077	WEBLI	DDH#EBL1	9	LG	372.56		3.9	6.1	0.92	0.345	1.32		25	219	38	<0.01		
91DCP-078	WEBLI	DDH#EBL1	9	LG	394.53		6.8	8.9	1.74	0.275			49	118	34	<0.01		
91DCP-079A	WEBLI	DDH#EBL1	9	LG	413.84		4.1	2.9	0.63	0.152			50	545	56	<0.01		
91DCP-080	WEBLI	DDH#EBL1	9	LG	379.64		2.8	3.0	0.51	0.079	2.21		42	44	21	<0.01		
91DCP-081	WEBLI	DDH#EBL1	9	LG	240.45		9.3	8.3	0.99	0.047	0.84		34	243	39	<0.01		
91DCP-083	WEBLI	DDH#EBL1	9	LG	395.83		2.0	0.7	0.26	0.131	0.47		49	122	41	<0.01		
91DCP-084	WEBLI	DDH#EBL1	9	LG	398.00		13.8	1.6	0.45	0.302	0.37		59	137	38	<0.01		
91DCP-085	WEBLI	DDH#EBL1	9	LG	400.23		1.0	5.5	1.66	0.219	19.1		116	239	49	0.01		
91DCP-086	WEBLI	DDH#EBL1	9	LG	416.83		3.3	1.5	0.18	0.746	0.67		34	420	46	<0.01		
91DCP-087	WEBLI	Bull Lk.	9	LG	407970	5144620	13	8	<2				105	110.6	38.59	0.01		
91DCP-088	WEBLI	DDH#EBL1	9	LG	421.67		19.8	3.7	0.77	0.531			43	326	39	<0.01		
91DCP-089	WEBLI	DDH#EBL1	9	LG	425.62		6.9	2.1	1.39	0.735			47	324	43	0.01		
91DCP-090	WEBLI	DDH#EBL1	9	LG	429.15		5.5	4.2	0.81	1.96	0.55		49	274	36	0.02		
91DCP-358	WEBLI	DDH#EBL1	9	LG	245.08		11.3	6.8	0.85	0.267			124	122	33	0.01		
90DCP-426	EEBLI	Tiplady Lk.	9	LG	418259	5141285	7	2	<2				47	4300	76	0.01		
91DCP-176	EEBLI	Novick Lk.	9	LG	417587	5140452	8	10	<2				55	102	43	0.01	0.03	<0.05
91DCP-179	EEBLI	Novick Lk.	9	LG	417493	5140472	8	10	<2				122	87	43	0.01	0.14	<0.05
91DCP-199	EEBLI	Novick Lk.	9	LG	417592	5140480	6	4	<2				17	50	32	0.01		<0.05
91DCP-200	EEBLI	Novick Lk.	9	LG	417595	5140576	6	5	<2				59	50	33	0.02		
91DCP-201	EEBLI	Novick Lk.	9	LG	417624	5140572	9	10	<2				75	47	32	0.02		
91DCP-202	EEBLI	Novick Lk.	9	LG	417964	5140453	11	10	<2				66	72	38	0.01		
91DCP-203	EEBLI	Novick Lk.	9	LG	417501	5140321	10	8	<2				31	79	38	0.01	0.03	<0.05
91DCP-204	EEBLI	Novick Lk.	9	LG	417963	5140432	17	14	3				112	81	41	0.01		<0.05
91DCP-206	EEBLI	Novick Lk.	9	LG	417808	5140669	6	6	<2				125	48	29	0.02		
91DCP-207	EEBLI	Novick Lk.	9	LG	417870	5140566	3	25	<2				94	67	39	0.01		
91DCP-210	EEBLI	Tiplady Lk.	9	LG	418964	5140617	7	4	<2				84	103	37	0.02		
91DCP-212	EEBLI	Novick Lk.	9	LG	417832	5140950	10	14	<2				44	39	27	0.01	0.14	<0.05
91DCP-219	EEBLI	Tiplady Lk.	9	LG	417696	5141116	7	7	<2				86	77	45	0.01		
91DCP-225	EEBLI	Novick Lk.	9	LG	417644	5141026	4	3	<2				15	23	17	0.01		
91DCP-227	EEBLI	Tiplady Lk.	9	LG	417813	5141103	11	6	<2				124	59	36	0.02		
91DCP-229	EEBLI	Tiplady Lk.	9	LG	417957	5141137	5	7	<2				31	76	23	0.01	0.03	0.07
91DCP-230	EEBLI	Tiplady Lk.	9	LG	417887	5140997	12	10	<2				127	59	28	0.01		
91DCP-235	EEBLI	Tiplady Lk.	9	LG	417998	5141048	8	12	<2				73	92	40	0.01	0.1	<0.05
91DCP-236	EEBLI	Tiplady Lk.	9	LG	418295	5140818	4	5	<2				37	98	24	0.01		
91DCP-254	EEBLI	Tiplady Lk.	9	LG	418321	5140770	5	2	<2				133	198	46	0.02	0.24	<0.05
91DCP-255	EEBLI	Tiplady Lk.	9	LG	418376	5140821	11	4	<2				51	71	16	<0.01		
91DCP-260	EEBLI	Tiplady Lk.	9	LG	418433	5140594	5	13	<2				66	83	33	0.01	0.3	<0.05
91DCP-267	EEBLI	Tiplady Lk.	9	LG	418706	5141120	2	<1	<2				17	133	29	0.01		
91DCP-272	EEBLI	Tiplady Lk.	9	LG	419073	5140686	15	7	<2				30	420	87	0.02		
91DCP-277	EEBLI	Tiplady Lk.	9	LG	418901	5141048	4	2	<2				62	215	45	0.01		
91DCP-278	EEBLI	Tiplady Lk.	9	LG	418937	5140791	5	14	<2				60	195	43	0.02		
91DCP-279	EEBLI	Tiplady Lk.	9	LG	418797	5140895	5	3	<2				18	295	47	0.01		
91DCP-280	EEBLI	Novick Lk.	9	LG	418129	5140479	13	10	<2				75	50	26	0.01		
91DCP-281	EEBLI	Tiplady Lk.	9	LG	418873	5140974	4	7	3				34	185	33	0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-322	EEBLI	Novick Lk	9	LG	418408	5140429	10	17	<2				91	69	36	0.02		
91DCP-325	EEBLI	Tiplady Lk	9	LG	418709	5140336	6	7	<2				52	48	23	0.01		
91DCP-337	EEBLI	Novick Lk	9	LG	417564	5140072	5	6	<2				43	102	51	0.01		
91DCP-338	EEBLI	Novick Lk	9	LG	417592	5139898	6	4	<2				16	155	31	<0.01	0.04	<0.05
91DCP-339	EEBLI	Novick Lk	9	LG	417578	5139796	9	6	3				144	305	55	0.02		
91DCP-340	EEBLI	Novick Lk	9	LG	417894	5140023	18	29	3				111	72	44	0.01	0.16	<0.05
91DCP-341	EEBLI	Novick Lk	9	LG	418033	5139811	7	5	<2				77	40	25	<0.01	0.07	<0.05
91DCP-342	EEBLI	South Lk	9	LG	418709	5139866	<1	3	<2				43	82	23	0.01		
91DCP-353	EEBLI	Novick Lk	9	LG	418271	5139932	11	9	<2				107	117	45	0.01		
91DCP-357	EEBLI	South Lk	9	LG	418920	5139178	15	3	<2				73	87	26	0.02	0.12	<0.05
91DCP-286	WEBLI	Moon Lk	9	MG	407290	5143080	2	2	<2				38	113	23	0.02		
91DCP-388	EEBLI	Tiplady Lk	9	MG	418001	5141195	6	6	<2				47	415	77	0.03		
90DCP-102	WEBLI	Bull Lk	9	OG	409390	5142580	7	5	<2				138	320	42	0.01		
90DCP-409	WEBLI	Bull Lk	9	OG	409450	5142550	3	4	<2				68	331	46	0.01		
90DCP-410	WEBLI	Bull Lk	9	OG	409520	5142530	7	12	<2				33	254	44	<0.01		
91DCP-177	WEBLI	Folson Lk	9	OG	409370	5142780	3	1	<2				61.47	363.8	56.21	0.01		
90DCP-411	EEBLI	Tiplady Lk	9	qG	417857	5141206	9	19	<2				44	65	31	0.01		
91DCP-172	EEBLI	Tiplady Lk	9	vtLG	417798	5141103	12	17	<2				93	38	20	0.01		
90DCP-052	WEBLI	DDH#EBL1	10	G	171.32		64.9	29.1	8.03	0.028	0.86		54	212	48	<0.01		
91DCP-032	WEBLI	DDH#EBL1	10	G	200.24		47.4	7.7	1.21	0.018	0.37		102	409	84	<0.01		
91DCP-039	WEBLI	DDH#EBL1	10	LG	175.95		3.4	5.2	1.22	0.008			69	193	43	0.01		
90DCP-065	WEBLI	Moon Lk	10	OG	407310	5142100	28	11	<2				58	396	74	0.01		
90DCP-066	WEBLI	DDH#EBL1	10	OG	185.65		11.3	6.7	1.98	0.012	0.29		92	575	100	0.01		
91DCP-029	WEBLI	DDH#EBL2	10	OG	41.87		78.9	66.2	5.73	0.074	0.24		79	584	116	0.01		
91DCP-033	WEBLI	DDH#EBL1	10	OG	163.85		35.5	33.6	7.29	0.052			144	605	131	0.01		
91DCP-035	WEBLI	DDH#EBL1	10	OG	186.62		12.2	3.6	1.18	0.009			94	590	109	<0.01		
91DCP-036	WEBLI	DDH#EBL1	10	OG	197.07		25.7	18.1	0.81	0.155			46	659	122	0.01		
91DCP-038	WEBLI	DDH#EBL1	10	OG	201.47		19.2	15.6	3.33	0.015	1.18		64	520	93	0.02		
91DCP-040	WEBLI	DDH#EBL1	10	OG	209.4		8.8	12.5	0.46	0.021	0.04		77	492	81	<0.01	0.025	
91DCP-041	WEBLI	DDH#EBL2	10	OG	57.82		18.4	13.6	4.11	0.082			133	587	111	0.03		
91DCP-161	WEBLI	DDH#EBL2	10	OG	96.93		6.3	5.5	0.45	0.027	0.31		86	293	53	<0.01		
91DCP-162	WEBLI	DDH#EBL2	10	OG	90.05		2.6	2.3	0.39	0.007	0.25		38	636	102	<0.01		
91DCP-165	WEBLI	DDH#EBL2	10	OG	65.95		17.6	4.5	0.61	0.027	0.55		54	666	93	0.01		
91DCP-166	WEBLI	DDH#EBL2	10	OG	102.2		5.8	5.4	0.94	0.005	0.27		46	221	43	0.01		
91DCP-167	WEBLI	Moon Lk	10	OG	407310	5142080	6	1	<2				51.27	308	50.73	0.02		
91DCP-169	WEBLI	DDH#EBL2	10	OG	76.68		16.1	17.7	0.98	0.044	0.13		68	421	78	0.01		
91DCP-170	WEBLI	DDH#EBL2	10	OG	81.45		5.9	9.5	2.89	0.009	0.05		69	607	103	0.01		
90DCP-060	WEBLI	Folson Lk	11	A	401010	5143180	10	2	<2				3.877	45.53	12.88	0.01		
90DCP-058	WEBLI	Moon Lk	11	G	406660	5142980	20	4	<2				61.2	59.4	23.87	0.03		
90DCP-059	WEBLI	Moon Lk	11	G	406590	5142710	11	14	<2				60.45	81.29	34.39	0.01		
90DCP-062	WEBLI	Moon Lk	11	G	406930	5142670	42	23	<2				63.24	43.16	18.39	0.01		
90DCP-067	WEBLI	Moon Lk	11	G	406780	5142690	5	6	<2				87.3	86.23	35.14	0.01		
90DCP-068	WEBLI	Moon Lk	11	G	406800	5142690	2	2	<2				139.5	77.33	32.11	0.02		
90DCP-069	WEBLI	Moon Lk	11	G	406530	5142390	9	7	<2				44.48	78.45	35.16	0.01		
90DCP-082	WEBLI	Moon Lk	11	G	406510	5142460	18	22	2				114	105.8	45.39	0.01		
90DCP-083	WEBLI	Moon Lk	11	G	406490	5142540	8	8	2				115.2	94.81	38.76	0.01		
90DCP-084	WEBLI	Moon Lk	11	G	406360	5142580	11	6	<2				90.91	100.9	43.53	0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-085	WEBLI	Moon Lk	11	G	406390	5142580	12	11	<2				74.74	93.69	40.09	0.01		
90DCP-086	WEBLI	Moon Lk	11	G	406520	5142010	17	11	<2				54.72	88.27	45.2	0.01		
90DCP-089	WEBLI	Moon Lk	11	G	406420	5142010	13	12	2				99	76	41	0.02		
90DCP-090	WEBLI	DDH#EBL1	11	G	93.6		38.9	39.5	2.69	0.026	0.69		75	227	71	0.05		
90DCP-111	WEBLI	Folson Lk	11	G	401050	5143220	3	6	<2				39.32	140.5	45.21	0.01		
90DCP-112	WEBLI	Folson Lk	11	G	401140	5143280	3	15	<2				95.83	82.39	40.81	0.01		
90DCP-113	WEBLI	Folson Lk	11	G	401160	5142820	8	7	<2				77.57	74.15	39.47	0.02		
90DCP-115	WEBLI	Folson Lk	11	G	401250	5142640	<1	3	<2				21.4	110.9	36.87	0.01		
90DCP-119	WEBLI	Folson Lk	11	G	401430	5143190	9	7	<2				93.95	79.82	42.5	0.02		
90DCP-132	WEBLI	Folson Lk	11	G	404730	5142320	16	13	<2				142.7	72.23	49.9	0.05		
90DCP-173	WEBLI	Folson Lk	11	G	401000	5142680	14	37	<2				136.6	76.23	46.65	0.01		
90DCP-175	WEBLI	Folson Lk	11	G	404760	5142610	12	11	<2				85.86	88.27	38.26	0.03		
90DCP-177	WEBLI	Folson Lk	11	G	404830	5142790	4	5	9				69.65	83.16	31.62	0.01		
90DCP-178	WEBLI	Folson Lk	11	G	403830	5141450	13	16	<2				76.57	24.05	26.07	0.01		
90DCP-204	WEBLI	Folson Lk	11	G	403670	5141650	19	20	<2				141	28.59	28.76	0.01		
90DCP-207	WEBLI	Folson Lk	11	G	403130	5142440	3	6	<2				88	34	37	0.01		
90DCP-215	WEBLI	Folson Lk	11	G	403610	5142590	8	8	<2				72	89	41	0.01		
90DCP-218	WEBLI	Folson Lk	11	G	403610	5142480	9	7	3				67	83	44	0.01		
90DCP-219	WEBLI	Folson Lk	11	G	403590	5142440	17	14	4				80	79	41	0.01		
91DCP-020	WEBLI	DDH#EBL1	11	G	99.45		0.9	3.8	2.67	0.006			126	73	47	0.01		
91DCP-021	WEBLI	DDH#EBL1	11	G	145.29		<0.9	18.8	5.55	0.005			94	448	98	<0.01		
91DCP-024	WEBLI	DDH#EBL1	11	G	162.03		112	13.5	2.27	0.042	0.92		75	120	41	<0.01		
91DCP-026	WEBLI	Moon Lk	11	G	407000	5142820	5	3	<2				34.68	286.5	52.88	0.01		
90DCP-110	WEBLI	Folson Lk	11	LG	404850	5142930	3	3	<2				88.12	39.11	13.52	0.01		
90DCP-170	WEBLI	Folson Lk	11	LG	404820	5142760	13	21	<2				82.82	92.48	36.68	0.01		
90DCP-171	WEBLI	Folson Lk	11	LG	403490	5141960	15	9	<2				98.02	27.33	25.07	0.02		
90DCP-192	WEBLI	Folson Lk	11	LG	403390	5142610	11	6	<2				37	104	37	0.01		
90DCP-220	WEBLI	Folson Lk	11	LG	401000	5142900	4	6	<2				28.15	160.8	39.12	0.01		
91DCP-022	WEBLI	DDH#EBL1	11	LG	150.45		<0.4	8.4	4.25	0.009	0.28		49	91	42	<0.01		
91DCP-025	WEBLI	DDH#EBL1	11	LG	154.3		<1.5	17.5	7.23	0.017			107	116	34	0.02		
91DCP-027	WEBLI	Moon Lk	11	LG	406620	5142830	3	<1	<2				89.8	57.59	22.23	0.01		
91DCP-028	WEBLI	DDH#EBL1	11	LG	157.15		3.2	14.2	6.69	0.002			153	150	44	0.04		
91DCP-164	WEBLI	DDH#EBL1	11	LG	103.88		7.7	11.9	2.91	0.044	0.12		85	66	51	0.01		
90DCP-061	WEBLI	Moon Lk	11	MG	406640	5142910	27	15	<2				87.24	118.8	40.69	0.02		
90DCP-172	WEBLI	Folson Lk	11	MG	404800	5142690	4	9	<2				106.2	90.08	43.72	0.01		
90DCP-221	WEBLI	Folson Lk	11	MG	434780	5142710	11	16	3				79.17	109.9	44.79	0.01		
90DCP-176	WEBLI	Moon Lk	12	G	436000	5143150	36	32	<2				107	112	40	0.01		
90DCP-250	WEBLI	Moon Lk	12	G	406010	5142970	9	9	4				37	98	40	0.01		
90DCP-251	WEBLI	Moon Lk	12	G	406080	5142840	2	3	<2				67	128	43	0.01		
91DCP-005	WEBLI	DDH#EBL1	12	G	35.00		9.7	14.9	2.35	0.011			80	95	50	<0.01		
91DCP-006	WEBLI	DDH#EBL1	12	G	39.10		17.2	22.7	2.13	0.052	0.45		69	106	70	0.01		
91DCP-007	WEBLI	DDH#EBL1	12	G	43.32		28.1	10.1	1.64	0.035	0.48		100	126	63	0.02		
91DCP-008	WEBLI	DDH#EBL1	12	G	49.98		46.8	46.1	4.43	0.019	0.31		105	95	57	<0.01		
91DCP-010	WEBLI	DDH#EBL1	12	G	75.55		26.6	22.2	1.83	0.043			77	98	49	<0.01		
91DCP-262	WEBLI	DDH#EBL1	12	G	32.00		10.1	9.5	3.33	0.027	0.16		97	95	49	0.01		
90DCP-260	EEBLI	Tiplady Lk	12	G	418346	5140957	20	18	<2				19	300	99	0.01		
91DCP-248	EEBLI	Tiplady Lk	12	G	418245	5141091	10	13	<2				74	135	53	0.02	0.62	<0.05

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-250	EEBLI	Tiplady Lk	12	G	418286	5140876	6	16	<2				101	178	47	0.02		
90DCP-116	WEBLI	DDH#EBL1	12	LG	47.63		19.5	36.9	5.01	0.058			107	66	44	0.01		
91DCP-009	WEBLI	DDH#EBL1	12	LG	61.52		8.3	15.7	5.45	0.018	0.31		43	88	45	<0.01		
91DCP-012	WEBLI	DDH#EBL1	12	LG	67.35		14.2	27.7	4.75	0.011	0.28		76	96	47	<0.01		
91DCP-016	WEBLI	Moon Lk	12	LG	406010	5143250	1	6	<2				78	109	35	0.02		
DCP-249	EEBLI	Tiplady Lk	12	LG	418279	5141296	4	6	<2				62	245	46	0.02		
91DCP-181	EEBLI	Tiplady Lk	12	MG	418084	5140890	17	28	3				62	114	47	0.01	0.07	<0.05
91DCP-239	EEBLI	Novick Lk	12	MG	418174	5140746	13	19	<2				50	155	65	0.01	0.09	<0.05
90DCP-206	EEBLI	Tiplady Lk	12	qG	418294	5140934	13	25	<2				82	121	45	0.01		
91DCP-249	EEBLI	Tiplady Lk	12	qG	418200	5140998	24	7	<2				60	158	59	0.01		<0.05
90DCP-087	WEBLI	Moon Lk	12	vtG	406800	5142440	21	6	50				84.65	102.5	42.95	0.02		
90DCP-088	WEBLI	Folson Lk	12	vtG	401050	5143300	<1	19	<2				59.37	113.2	53.67	0.01		
90DCP-104	WEBLI	Folson Lk	12	vtG	401150	5143050	15	17	2				129.2	52.68	42.38	0.01		
90DCP-114	WEBLI	Folson Lk	12	vtG	401580	5143130	12	10	<2				95.95	86.5	45.45	0.02		
90DCP-133	WEBLI	Folson Lk	12	vtG	404800	5142670	33	6	<2				88.72	88.06	38.28	0.01		
90DCP-174	WEBLI	Folson Lk	12	vtG	404750	5142390	21	10	<2				54.01	105	44.04	0.01		
91DCP-013	WEBLI	Moon Lk	12	vtG	406780	5142420	21	20	7				114.6	104.2	44.82	0.02		
91DCP-182	EEBLI	Tiplady Lk	12	vtG	418225	5140924	3	6	3				144	63	34	0.02	0.11	<0.05
91DCP-251	EEBLI	Tiplady Lk	12	vtG	418324	5141308	<1	<1	3				33	187	37	0.01		
90DCP-160	WEBLI	Moon Lk	12	vtLG	405980	5142860	18	8	<2				49	128	46	0.01		
90DCP-203	WEBLI	Folson Lk	12	vtLG	403730	5141600	15	22	<2				108.9	18.47	23.57	0.01		
90DCP-252	WEBLI	Folson Lk	12	vtLG	403830	5141330	13	9	<2				81.15	37.88	33.74	0.01		
91DCP-246	WEBLI	Folson Lk	12	vtLG	401880	5142310	10	14	<2				114.1	58.98	39.97	0.01		
91DCP-247	EEBLI	Tiplady Lk	13	A	419134	5140565	<1	8	<2				46	6	<5	<0.01	0.06	0.17
90DCP-091	WEBLI	Moon Lk	13	G	406250	5142060	15	20	<2				79	76	41	0.02		
90DCP-093	WEBLI	Moon Lk	13	G	406250	5142210	8	6	<2				74	71	38	0.01		
90DCP-094	WEBLI	Moon Lk	13	G	406250	5142320	13	14	2				93	90	45	0.02		
90DCP-095	WEBLI	Moon Lk	13	G	406250	5142410	11	9	<2				96	72	37	0.02		
90DCP-096	WEBLI	Folson Lk	13	G	401300	5142800	12	15	10				143	43	41	0.02		
90DCP-122	WEBLI	Folson Lk	13	G	401470	5142770	15	15	<2				96	41	36	0.02		
90DCP-126	WEBLI	Folson Lk	13	G	401470	5143090	17	16	2				39	75	44	0.01		
90DCP-130	WEBLI	Folson Lk	13	G	401960	5142070	9	8	<2				49	41	31	0.01		
90DCP-151	WEBLI	Folson Lk	13	G	401630	5142220	20	20	<2				19	52	35	0.01		
90DCP-154	WEBLI	Folson Lk	13	G	401560	5142290	14	18	<2				124	65	38	0.05		
90DCP-157	WEBLI	Moon Lk	13	G	405960	5142540	8	7	4				93	76	37	0.01		
90DCP-254	WEBLI	Moon Lk	13	G	405930	5142390	12	12	<2				81	84	42	0.01		
90DCP-255	WEBLI	Moon Lk	13	G	405910	5142180	13	13	2				84	125	47	0.01		
90DCP-256	WEBLI	Moon Lk	13	G	406010	5142210	9	8	2				111	76	39	0.02		
90DCP-258	WEBLI	Moon Lk	13	G	406040	5142520	6	6	<2				78	74	38	0.01		
91DCP-002	WEBLI	Moon Lk	13	G	406320	5142010	13	12	2				136	82	42	0.01		
91DCP-387	WEBLI	DDH#EBL1	13	G	4.23		10.1	17.1	2.36	0.035			94	156	62	<0.01	0.212	
90DCP-259	EEBLI	Nodule Pond	13	G	420226	5139598	2	2	<2				64	67	22	0.01		
91DCP-296	EEBLI	Tiplady Lk	13	G	419048	5140349	2	3	<2				40	108	34	0.02	0.04	<0.05
91DCP-331	EEBLI	South Lk	13	G	419302	5139567	11	5	<2				20	88	28	0.01		
91DCP-346	EEBLI	Goulding Lk	13	G	418557	5139360	10	7	<2				68	335	50	0.03	0.28	<0.05
90DCP-003	WEBLI	DDH#EBL1	13	LG	8.95		7.5	13.1	1.79	0.061			94	62	48	<0.01		
91DCP-332	WEBLI	DDH#EBL1	13	LG	11.13		8.9	14.5	1.89	0.028			43	76	54	<0.01		

APPENDIX 5, Part C (continued)

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	TYPE	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
91DCP-001	EEBLI	Nodule Pond	13	LG	419937	5139686	20	11	<2				84	155	34	0.01		
91DCP-312	EEBLI	Tiplady Lk	13	LG	419328	5140384	5	5	<2				74	175	34	0.02		
91DCP-313	EEBLI	Nodule Pond	13	LG	419437	5140403	11	10	<2				71	190	32	0.01		
91DCP-334	EEBLI	Tiplady Lk	13	LG	419183	5140113	6	9	<2				109	425	65	0.02		
91DCP-335	EEBLI	Tiplady Lk	13	LG	418925	5140411	8	5	<2				62	62	19	0.02		
91DCP-336	EEBLI	South Lk	13	LG	420892	5139393	7	7	<2				60	300	51	0.01		
91DCP-345	EEBLI	South Lk	13	LG	419103	5139558	15	6	<2				20	170	42	<0.01		
91DCP-347	EEBLI	South Lk	13	LG	418871	5139575	5	4	<2				99	225	41	0.01		
91DCP-348	EEBLI	South Lk	13	LG	418888	5139809	4	9	<2				36	350	60	0.01		
91DCP-349	EEBLI	South Lk	13	LG	419049	5139730	7	7	<2				36	410	67	0.02		
91DCP-350	EEBLI	South Lk	13	LG	418979	5139959	10	13	<2				38	500	86	0.01		
91DCP-351	EEBLI	South Lk	13	LG	418932	5140158	3	2	<2				67	360	67	0.01		
91DCP-364	EEBLI	Nodule Pond	13	LG	420070	5139831	14	13	<2				43	125	31	0.01		
91DCP-352	WEBLI	Moon Lk	13	MG	405980	5142670	9	12	2				103	108	46	0.01		
90DCP-253	EEBLI	South Lk	13	qG	418217	5139003	6	<1	<2				42	175	35	0.02		

APPENDIX 5. Chalcophile Metal Abundances in Mafic and Ultramafic Rocks from the Bull Lake Area.

Part D. Analyses of samples of structurally-controlled sulphide mineralization from the East Bull Lake intrusion.

Pd, Pt, Au, Ir, Ru and Rh abundances are in ppb; Cu, Ni, Co, Se and Bi are in ppm; S data are in wt%. Blanks indicate no determination was made.

SAMPLE#	LOC'N 1	LOC'N 2	UNIT	NAME 1	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-341	WEBLI	PLDZ	6	G	410980	5141860	160	97	22				1190	419	73	0.56	1.41	1.14
90DCP-342	WEBLI	PLDZ	6	G	410981	5141860	130	80	15				1390	511	69	0.24	1.66	1.7
90DCP-343	WEBLI	PLDZ	6	G	410982	5141860	220	105	22				1640	613	83	1.14	1.88	1.97
90DCP-344	WEBLI	PLDZ	6	G	410983	5141860	205	115	28				1580	539	88	0.79	2.19	1.60
90DCP-345	WEBLI	PLDZ	6	MS	410980	5141864	308	164	8				164	275				
90DCP-346	WEBLI	PLDZ	6	MS	410760	5141790	565	173	16				1370	2317	370	7.65	9.90	4.30
90DCP-347a	WEBLI	PLDZ	6	MS	410760	5141790	1520	500	95				5290	4280	2000	20.9	24.6	10.7
90DCP-347b	WEBLI	PLDZ	6	MS	410760	5141790	840	367	65				3880	1950	1150	11.0	12.0	1.81
90DCP-351	WEBLI	PLDZ	7	D	410300	5141570	12	3	3				379	76	63	1.15	1.03	0.35
90DCP-277	WEBLI	Moon Lk	7	EV	407950	5141510	315	112	220				2800	112	25	0.80	4.20	2.70
90DCP-499	WEBLI	PLDZ	7	MAGT	410360	5141570	1370	1060	100				8200	367	63	10.6	6.15	4.30
91DCP-576	WEBLI	PLDZ	7	MAGT	410395	5141575	400	210	74				4150	870	70	1.1	13.3	2.7
91DCP-579	WEBLI	PLDZ	7	MAGT	410395	5141575	1050	788	156	1.18	2.23	110	8400	920	57	1.9	19.4	5.5
91DCP-580	WEBLI	PLDZ	7	MAGT	410395	5141575	1880	270	200				34000	1200	73	4.7	44.7	5.3
91DCP-585	WEBLI	PLDZ	7	MAGT	410395	5141575	415	160	120				6100	500	50	1.0	4.90	3.6
90DCP-353	WEBLI	PLDZ	7	MS	410330	5141570	1520	275	280	2.1		29	33600	3760	263	11.4	30.4	9.1
90DCP-354	WEBLI	PLDZ	7	MS	410360	5141580	1550	230	180	1.4		8.7	24400	9770	622	18.3	47.3	4.35
90DCP-355	WEBLI	PLDZ	7	MS	410360	5141581	620	193	350				17000	1880	146	5.33	14.1	3.05
90DCP-482	WEBLI	PLDZ	7	MS	410310	5141580	465	155	110				5160	1670	163	0.71	5.51	4.35
90DCP-483	WEBLI	PLDZ	7	MS	410310	5141580	560	182	235	3.6			7830	2780	192	1.57	10.1	8.00
90DCP-484	WEBLI	PLDZ	7	MS	410310	5141580	25	21	23				1930	229	132	1.11	2.92	1.31
90DCP-485	WEBLI	PLDZ	7	MS	410320	5141570	600	318	80				1260	653	89	1.46	4.26	1.88
90DCP-486	WEBLI	PLDZ	7	MS	410320	5141560	4		3				468	113	50	0.09	0.61	0.31
90DCP-487	WEBLI	PLDZ	7	MS	410320	5141560	2		5				540	100				
90DCP-488	WEBLI	PLDZ	7	MS	410320	5141560	2175	475	550	7.1			56300	1730	149	7.30	27.6	12.50
90DCP-489	WEBLI	PLDZ	7	MS	410330	5141570	1		5				1150	320				
90DCP-490	WEBLI	PLDZ	7	MS	410330	5141570	1790	545	33	5.8		25.2	2710	10300	839	24.2	69.0	4.10
90DCP-491	WEBLI	PLDZ	7	MS	410340	5141580	780	115	130				13200	2070	137	4.86	13.9	2.72
90DCP-492	WEBLI	PLDZ	7	MS	410340	5141580	1120	277	140				6200	6854	269	13.9	35.9	3.2
90DCP-493	WEBLI	PLDZ	7	MS	410340	5141580	680	147	150				20000	1980	155	5.68	15.2	3.72
90DCP-494	WEBLI	PLDZ	7	MS	410340	5141580	520	160	85				11900	3400	234	6.63	20.7	4.02
90DCP-496	WEBLI	PLDZ	7	MS	410350	5141570	720	110	60				4500	2200	171	4.57	12.6	1.91
90DCP-497	WEBLI	PLDZ	7	MS	410360	5141570	2300	171	70	8.8			145000	4745	271	24.4	52.1	8.80
90DCP-498	WEBLI	PLDZ	7	MS	410360	5141570	1260	320	24			8	1040	7510	1740	22.8	45.4	10.3
90DCP-500	WEBLI	PLDZ	7	MS	410360	5141570	1600	189	140	4			39300	2870	224	8.16	25.2	4.55
91DCP-573	WEBLI	PLDZ	7	MS	410340	5141570	3760	680	550	0.33	2.75	68.8	5500	1090	2150	39.8	48.9	0.8
91DCP-574	WEBLI	PLDZ	7	MS	410340	5141575	470	160	119				3400	1700	200	3.3	14.6	2.3
91DCP-575	WEBLI	PLDZ	7	MS	410350	5141585	580	130	128				17300	5150	350	8.9	30.4	5.6
91DCP-577	WEBLI	PLDZ	7	MS	410395	5141575	540	160	87				72500	6300	360	17.8	32.1	6.8
91DCP-578	WEBLI	PLDZ	7	MS	410395	5141575	840	250	320				6875	8600	1150	17.2	43.0	7.0
91DCP-581	WEBLI	PLDZ	7	MS	410395	5141575	2000	500	89				1250	9100	2600	28.6	35.4	6.0
91DCP-582	WEBLI	PLDZ	7	MS	410395	5141575	1320	180	130	0.29	1.01	150	12400	3750	320	6.5	139	3.3
91DCP-583	WEBLI	PLDZ	7	MS	410395	5141575	2480	200	125				5250	2950	200	21	82.5	6.9
91DCP-584	WEBLI	PLDZ	7	MS	410395	5141575	2030	219	34	0.49	1.23	82.3	6450	16300	860	22.9	0.41	5.6
90DCP-152	WEBLI	Folson Lk	13	G	401670	5142120	26	20	61				352	70	46	0.05	0.87	0.09

APPENDIX 5. Chalcophile Metal Abundances in Mafic and Ultramafic Rocks from the Bull Lake Area.

Part E. Analyses of mafic dikes and sills from the Bull Lake area.

Pd, Pt, Au, Ir, Ru and Rh abundances are in ppb; Cu, Ni, Co, Se and Bi are in ppm; S data are in wt%. Blanks indicate no determination was made.

SAMPLE#	LOC'N 1	LOC'N 2	TYPE	NAME 1	ASSOC'N	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-006	WEBLI	Hwy. 553	DYKE	G	MH Swarm	408370	5137910	<1	<1	<2				57	73	40	0.09		
90DCP-013	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	408010	5138800	24	18	3				101	105	47	0.06		
90DCP-016	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	407910	5139010	14	17	<2				107	98	44	0.07		
90DCP-017	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	407910	5139030	17	13	<2				109	98	44	0.08		
90DCP-018	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	407910	5139050	14	13	<2				108	98	47	0.06		
90DCP-019	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	407910	5139070	14	12	<2				108	91	44	0.09		
90DCP-020	WEBLI	Hwy. 553	DYKE	yD	MH Swarm	407910	5139090	59	41	3				137	93	49	0.11		
90DCP-103	WEBLI	Folson Lk	DYKE	yD	MH Swarm	401050	5143300	42	48	3				158	95	51	0.03		
90DCP-106	WEBLI	Folson Lk	DYKE	yD	MH Swarm	401050	5143290	50	34	5				98	89	55	0.01		
90DCP-106	WEBLI	Folson Lk	DYKE	yD	MH Swarm	401050	5143290	50	34	5				98	89	55	0.01		
90DCP-208	WEBLI	Folson Lk	DYKE	G	MH Swarm	403390	5143480	15	15	2				149	118	46	0.03		
90DCP-209	WEBLI	Folson Lk	DYKE	G	MH Swarm	403340	5143490	10	12	<2				125	109	42	0.01		
90DCP-210	WEBLI	Folson Lk	DYKE	G	MH Swarm	403270	5143520	14	15	<2				122	117	45	0.05		
90DCP-211	WEBLI	Folson Lk	DYKE	G	MH Swarm	403160	5143580	16	18	<2				142	137	49	0.03		
90DCP-212	WEBLI	Folson Lk	DYKE	G	MH Swarm	403060	5143680	2	3	<2				154	102	46	0.36		
90DCP-213	WEBLI	Folson Lk	DYKE	G	MH Swarm	403250	5143600	15	14	<2				134	111	43	0.04		
90DCP-396	WEBLI	Parisien Lk	DYKE	yD	MH Swarm	407850	5141930	<1	<1	<2				144	75	37	0.03		
91DCP-160	WEBLI	DDH#EBL1	DYKE	yD	MH Swarm	844.65		<0.36	8.6	3.71	0.003	0.16		137	33	60	0.11		
90DCP-294	EEBLI	Site 5	DYKE	D	MH Swarm	412640	5142120	4	2	12				135	119	48	0.12		
90DCP-302	EEBLI	Site 5	DYKE	yD	MH Swarm	412605	5142135	12	14	<2				193	97	49	0.17		
90DCP-302	EEBLI	Site 5	DYKE	yD	MH Swarm	412605	5142135	12	14	<2				193	97	49	0.17		
90DCP-305	EEBLI	Site 5	DYKE	D	MH Swarm	412590	5142125	<1	2	6				102	99	45	0.05		
90DCP-306	EEBLI	Site 5	DYKE	D	MH Swarm	412580	5142150	3	7	<2				160	44	41	0.06		
90DCP-316	EEBLI	Site 5	DYKE	D	MH Swarm	412535	5142105	<1	<1	12				127	62	44	0.12		
91DCP-291	EEBLI	Nodule Pond	DYKE	yD	MH Swarm	420416	5139885	28	17	<2				64	140	33	0.01	0.06	0.08
91DCP-315	EEBLI	Nodule Pond	DYKE	D	MH Swarm	420357	5139247	23	23	<2				71	140	46	0.02		
91DCP-317	EEBLI	Nodule Pond	DYKE	D	MH Swarm	420573	5139725	<1	<1	<2				167	225	45	0.07		
90DCP-429	TLI	Tee Lk	SILL	G	Nipissing	403530	5149420	5	14	<2				102	92	39	0.08		
90DCP-430	TLI	Tee Lk	SILL	G	Nipissing	403600	5149360	5	6	<2				106	94	40	0.09		
90DCP-431	TLI	Tee Lk	SILL	G	Nipissing	403650	5149300	4	4	<2				148	62	46	0.12		
90DCP-432	TLI	Tee Lk	SILL	G	Nipissing	403710	5149240	2	7	3				158	68	44	0.05		
90DCP-433	TLI	Tee Lk	SILL	G	Nipissing	403770	5149180	2	2	<2				95	110	39	0.08		
90DCP-434	TLI	Tee Lk	SILL	G	Nipissing	403830	5149120	12	12	<2				97	104	38	0.08		
90DCP-435	TLI	Tee Lk	SILL	G	Nipissing	403880	5149070	19	13	6				98	123	34	0.05		
90DCP-436	TLI	Tee Lk	SILL	qG	Nipissing	403970	5149000	16	3	150				104	35	13	0.01		
90DCP-437	TLI	Tee Lk	SILL	G	Nipissing	404080	5148860	21	17	5				92	149	39	0.03		
90DCP-438	TLI	Tee Lk	SILL	G	Nipissing	404160	5148770	43	39	<2				52	148	35	0.02		
90DCP-439	TLI	Tee Lk	SILL	G	Nipissing	404250	5148600	38	36	<2				52	177	39	0.03		
90DCP-440	TLI	Tee Lk	SILL	G	Nipissing	404250	5148600	<1	<1	<2				32	25	7	0.01		
90DCP-441	TLI	Tee Lk	SILL	G	Nipissing	404380	5148490	32	30	<2				38	172	35	0.03		
90DCP-442	TLI	Tee Lk	SILL	G	Nipissing	404620	5148240	25	23	<2				43	178	40	0.02		
90DCP-443	TLI	Tee Lk	SILL	G	Nipissing	401700	5149530	27	21	<2				56	142	35	0.04		
90DCP-444	TLI	Tee Lk	SILL	G	Nipissing	401730	5149510	27	21	<2				63	134	35	0.04		
90DCP-445	TLI	Tee Lk	SILL	G	Nipissing	401820	5149430	12	9	<2				97	107	40	0.07		
90DCP-446	TLI	Tee Lk	SILL	G	Nipissing	401950	5149250	11	10	2				106	105	38	0.01		

APPENDIX 5, Part E (continued)

SAMPLE#	LOC'N 1	LOC'N 2	TYPE	NAME 1	ASSOC'N	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-447	TLI	Tee Lk	SILL	G	Nipissing	402010	5149160	10	8	3				144	105	40	0.09		
90DCP-448	TLI	Tee Lk	SILL	G	Nipissing	402050	5149090	11	8	4				114	104	39	0.06		
90DCP-449	TLI	Tee Lk	SILL	G	Nipissing	402130	5148980	21	12	4				118	135	37	0.06		
90DCP-450	TLI	Tee Lk	SILL	G	Nipissing	402210	5148880	25	16	3				87	151	37	0.03		
90DCP-451	TLI	Tee Lk	SILL	G	Nipissing	402270	5148800	<1	<1	<2				168	60	47	0.16		
90DCP-452	TLI	Tee Lk	SILL	G	Nipissing	402350	5148680	30	22	<2				57	167	37	0.03		
90DCP-453	TLI	Tee Lk	SILL	G	Nipissing	402450	5148550	23	18	<2				72	155	38	0.05		
90DCP-454	TLI	Tee Lk	SILL	G	Nipissing	402510	5148490	14	16	2				83	122	36	0.05		
90DCP-469	SLI	Splake Lk	SILL	G	Nipissing	412590	5148770	21	22	4				82	157	38	0.05		
90DCP-470	SLI	Splake Lk	SILL	G	Nipissing	412600	5148800	<1	1	2				88	130	35	0.04		
90DCP-471	SLI	Splake Lk	SILL	qG	Nipissing	412600	5148800	21	26	7				68	105	35	0.03		
90DCP-472	SLI	Splake Lk	SILL	G	Nipissing	412570	5148730	24	22	5				99	153	40	0.07		
90DCP-474	SLI	Splake Lk	SILL	G	Nipissing	412200	5149280	27	19	4				48	233	42	0.03		
90DCP-475	SLI	Splake Lk	SILL	G	Nipissing	412130	5149370	18	16	<2				49	224	41	0.02		
90DCP-476	SLI	Splake Lk	SILL	G	Nipissing	412100	5149400	23	23	<2				43	204	37	0.01		
90DCP-478	SLI	Splake Lk	SILL	G	Nipissing	411820	5149480	29	24	<2				45	184	34	0.03		
90DCP-479	EEBLI	Site 5	SILL	G	Nipissing	412930	5142410	18	10	<2				107	169	42	0.02		
90DCP-480	EEBLI	Site 5	SILL	G	Nipissing	412840	5142370	21	10	<2				112	93	40	0.04		
90DCP-456	BLI	Barrow Lk	SILL	G	Nipissing	414950	5150850	28	33	5				70	135	34	0.04		
90DCP-457	BLI	Barrow Lk	SILL	G	Nipissing	414910	5150930	<1	2	5				124	136	38	0.05		
90DCP-458	BLI	Barrow Lk	SILL	G	Nipissing	414860	5151020	6	4	7				141	133	37	0.04		
90DCP-459	BLI	Barrow Lk	SILL	G	Nipissing	414780	5151080	3	6	8				126	116	32	0.05		
90DCP-460	BLI	Barrow Lk	SILL	G	Nipissing	414620	5151340	6	10	9				122	127	33	0.06		
90DCP-461	BLI	Barrow Lk	SILL	G	Nipissing	414580	5151400	4	4	6				130	108	30	0.06		
90DCP-462	BLI	Barrow Lk	SILL	G	Nipissing	414500	5151510	2	5	6				137	105	30	0.07		
90DCP-463	BLI	Barrow Lk	SILL	G	Nipissing	414380	5151680	10	10	<2				104	117	37	0.05		
90DCP-464	BLI	Barrow Lk	SILL	G	Nipissing	414290	5151800	3	3	8				119	109	32	0.02		
90DCP-465	BLI	Barrow Lk	SILL	G	Nipissing	414220	5151890	<1	2	6				138	118	38	0.07		
90DCP-466	BLI	Barrow Lk	SILL	G	Nipissing	414040	5152090	<1	2	<2				130	91	32	0.07		
90DCP-001	WEBLI	Hwy 553	DYKE	Hybrid	?	408300	5137400	2	<1	<2				48	14	10	0.01		
90DCP-003	WEBLI	Hwy 553	DYKE	D	?	408310	5137640	<1	<1	<2				179	49	35	0.07		
90DCP-009	WEBLI	Hwy 553	DYKE	D	?	408300	5138210	24	13	<2				202	57	52	0.15		
90DCP-025	WEBLI	Hwy 553	DYKE	D	?	407990	5139480	<1	<1	<2				155	39	37	0.05		
90DCP-027	WEBLI	Hwy 553	DYKE	D	?	407980	5139620	29	27	5				190	55	50	0.13		
90DCP-032	WEBLI	Hwy 553	DYKE	D	?	407980	5140050	<1	<1	<2				151	34	39	0.02		
90DCP-034	WEBLI	Hwy 553	DYKE	D	?	408010	5140220	34	28	3				196	58	50	0.13		
90DCP-055	WEBLI	Bull Lk	DYKE	D	?	407180	5142910	<1	<1	<2				154	65	47	0.18		
90DCP-092	WEBLI	Bull Lk	DYKE	D	?	406290	5142010	<1	<1	<2				148	47	44	0.12		
90DCP-108	WEBLI	Folson Lk	DYKE	D	?	400910	5143130	16	18	2				174	56	43	0.01		
90DCP-109	WEBLI	Folson Lk	DYKE	D	?	400810	5142990	<1	<1	<2				4	13	6	0.01		
90DCP-118	WEBLI	Folson Lk	DYKE	D	?	401120	5142350	<1	<1	<2				7	35	22	0.01		
90DCP-118	WEBLI	Folson Lk	DYKE	D	?	401120	5142350	<1	<1	<2				7	35	22	0.01		
90DCP-120	WEBLI	Folson Lk	DYKE	D	?	401250	5142640	<1	5	<2				13	135	46	0.01		
90DCP-140	WEBLI	Folson Lk	DYKE	D	?	402290	5141420	11	9	5				113	71	46	0.10		
90DCP-146	WEBLI	Folson Lk	DYKE	D	?	401820	5141610	<1	<1	<2				152	62	44	0.12		
90DCP-147	WEBLI	Folson Lk	DYKE	D	?	401930	5141550	11	6	<2				97	133	43	0.04		
90DCP-147	WEBLI	Folson Lk	DYKE	D	?	401930	5141550	11	6	<2				97	133	43	0.04		

APPENDIX 5, Part E (continued)

SAMPLE#	LOC'N 1	LOC'N 2	TYPE	NAME 1	ASSOC'N	EAST	NORTH	Pd	Pt	Au	Ir	Ru	Rh	Cu	Ni	Co	S	Se	Bi
90DCP-149	WEBLI	Folson Lk	DYKE	D	?	401750	5141790	5	5	12				81	62	38	0.09		
90DCP-164	WEBLI	Folson Lk	DYKE	D	?	402200	5142600	12	7	<2				89	106	43	0.02		
90DCP-164	WEBLI	Folson Lk	DYKE	D	?	402200	5142600	12	7	<2				89	106	43	0.02		
90DCP-167	WEBLI	Folson Lk	DYKE	D	?	404880	5143070	4	6	<2				168	58	41	0.08		
90DCP-179	WEBLI	Folson Lk	DYKE	D	?	404910	5143130	25	22	4				258	85.41	55.63	0.06		
90DCP-179	WEBLI	Folson Lk	DYKE	D	?	404910	5143130	25	22	4				258	85	56	0.06		
90DCP-180	WEBLI	Folson Lk	DYKE	D	?	402290	5141490	17	20	<2				7	41	43	0.01		
90DCP-194	WEBLI	Folson Lk	DYKE	D	?	403820	5140890	2	2	<2				13	143	44	0.01		
90DCP-222	WEBLI	Folson Lk	DYKE	mSH	?	402290	5142610	26	24	<2				152	48	50	0.01		
90DCP-222	WEBLI	Folson Lk	DYKE	mSH	?	402290	5142610	26	24	<2				152	48	50	0.01		
90DCP-257	WEBLI	Bull Lk	DYKE	D	?	405910	5142170	<1	<1	<2				126	104	43	0.08		
90DCP-369	WEBLI	Moon Lk	DYKE	D	?	408160	5141810	<1	<1	11				42	42	26	0.20		
90DCP-380	WEBLI	Parisien Lk	DYKE	D	?	408450	5141510	<1	<1	<2				60	120	29	0.17		
90DCP-381	WEBLI	Parisien Lk	DYKE	D	?	408340	5141800	11	14	5				144	61	44	0.10		
90DCP-455	WEBLI	Tee Lk	DYKE	D	?	402640	5142310	5	5	<2				133	91	40	0.08		
91DCP-149	WEBLI	DDH#EBL1	DYKE	D	?	783.50		22.9	14.4	1.21	0.079	0.87		126	91	60	0.04		
91DCP-450	WEBLI	Moon Lk	DYKE	D	?	407925	5141525	<1	<1	5				50	11	15	0.16	0.37	0.22
91DCP-450	WEBLI	Moon Lk	DYKE	D	?	407925	5141525	<1	<1	5				50	11	15	0.16	0.37	0.22
31DCP-187	EEBLI	Tiplady Lk	DYKE	D	?	419396	5141244	14	15	<2				117	60	33	0.03	0.14	0.16
91DCP-188	EEBLI	Tiplady Lk	DYKE	D	?	419396	5141244	14	17	<2				193	50	32	0.07		
91DCP-190	EEBLI	Tiplady Lk	DYKE	D	?	419260	5141245	<1	<1	<2				52	55	54	0.19	0.45	0.23
91DCP-191	EEBLI	Tiplady Lk	DYKE	D	?	419260	5141245	<1	<1	<2				50	41	34	0.06		
91DCP-192	EEBLI	Tiplady Lk	DYKE	D	?	418254	5141578	<1	<1	<2				63	47	47	0.17	0.32	<0.05
91DCP-218	EEBLI	Novick Lk	DYKE	D	?	417889	5140811	<1	<1	<2				167	52	44	0.09		
91DCP-231	EEBLI	Tiplady Lk	DYKE	D	?	417802	5141142	<1	<1	<2				148	55	38	0.03		
91DCP-265	EEBLI	Tiplady Lk	DYKE	D	?	418543	5141201	<1	<1	<2				146	27	42	0.19	0.38	0.06
91DCP-283	EEBLI	Tiplady Lk	DYKE	D	?	418893	5141081	<1	<1	<2				138	26	50	0.30	0.94	0.08
91DCP-284	EEBLI	Tiplady Lk	DYKE	D	?	418888	5141068	2	4	<2				23	250	49	0.01		

APPENDIX 6. Rare-earth element abundances in rock samples from the Bull Lake area. See Appendices 1-4 for major and trace element geochemistry. All data are in ppm.

SAMPLE	LOC'N 1	LOC'N 2	UNIT	DEPTH(m)	NAME 1	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
90DCP-190	WEBLI	Folson Lk	2	-	T	58.2	121	13.6	54.3	11.4	2.32	10.8	1.74	11.2	2.26	6.47	0.985	6.49	0.964
91DCP-148	WEBLI	DH#EBL1	2	777.71	T	14.2	27.8	2.7	10.5	1.78	0.95	1.46	0.16	0.97	0.20	0.52	0.043	0.48	0.069
91DCP-158	WEBLI	DH#EBL1	2	820.20	T	4.0	8.4	0.9	3.7	0.82	0.50	0.80	0.10	0.74	0.15	0.48	0.055	0.62	0.080
90DCP-011	WEBLI	Hwy 553	3	-	SY	165	316	35.1	120	19.6	4.04	13.1	1.64	8.12	1.39	3.42	0.479	3.07	0.433
90DCP-362	WEBLI	Moon Lk	4	-	qG	16.8	31.3	3.4	13.3	2.25	1.49	1.58	0.19	1.21	0.21	0.60	0.086	0.66	0.090
90DCP-375	WEBLI	Moon Lk	4	-	qG	11.0	23.9	2.7	10.7	2.10	0.83	1.74	0.24	1.66	0.33	1.00	0.133	1.07	0.157
90DCP-402	WEBLI	Parisien Lk	4	-	qG	15.5	32.9	3.7	15.1	2.81	1.24	2.31	0.28	1.73	0.31	0.86	0.129	0.92	0.141
91DCP-171	WEBLI	DH#EBL2	4	786.85	qLG	8.6	18.9	2.1	8.6	1.68	0.79	1.50	0.20	1.29	0.26	0.72	0.081	0.74	0.095
91DCP-176	WEBLI	DH#EBL2	4	807.65	qLG	6.7	14.6	1.7	7.4	1.68	0.59	1.35	0.22	1.47	0.33	0.92	0.137	0.94	0.146
92PC-218	EEBLI	Nodule Pond	6a	-	iP	7.8	16.2	2.4	9.6	2.45	0.97	2.63	0.46	2.74	0.62	1.69	0.24	1.53	0.24
92PC-219	EEBLI	Nodule Pond	6a	-	iP	2.2	5.6	0.9	4.3	1.36	0.33	1.49	0.26	1.43	0.31	0.79	0.12	0.70	0.11
92PC-220	EEBLI	Nodule Pond	6a	-	iP	3.5	8.7	1.3	5.4	1.63	0.48	1.78	0.32	1.99	0.45	1.20	0.18	1.08	0.17
92PC-221	EEBLI	Nodule Pond	6a	-	iP	3.4	8.6	1.2	5.3	1.46	0.39	1.70	0.29	1.75	0.38	1.02	0.15	0.95	0.15
92PC-222	EEBLI	Nodule Pond	6a	-	iP	3.7	10.2	1.5	6.6	1.83	0.46	2.00	0.34	1.92	0.40	1.09	0.16	1.00	0.16
92PC-223	EEBLI	Nodule Pond	6a	-	iP	1.5	4.1	0.6	2.8	0.90	0.24	1.03	0.18	1.19	0.26	0.73	0.11	0.71	0.12
92PC-224	EEBLI	Nodule Pond	6a	-	iP	0.5	1.4	0.3	1.8	0.85	0.18	1.05	0.18	1.15	0.24	0.67	0.09	0.62	0.10
92PC-226	EEBLI	Nodule Pond	6a	-	iP	2.1	6.0	0.8	4.2	1.35	0.32	1.47	0.26	1.59	0.33	0.88	0.14	0.79	0.13
92PC-227	EEBLI	Nodule Pond	6a	-	iP	5.5	14.0	1.9	8.1	2.07	0.58	2.08	0.34	1.99	0.43	1.14	0.17	1.03	0.16
91DCP-112	WEBLI	DH#EBL1	7	638.78	A	2.5	5.3	0.6	2.6	0.54	0.39	0.50	0.06	0.51	0.08	0.34	0.030	0.28	0.040
91DCP-117	WEBLI	DH#EBL1	7	652.7	LG	3.1	6.7	0.8	3.2	0.76	0.44	0.84	0.10	0.85	0.16	0.54	0.048	0.46	0.041
91DCP-121	WEBLI	DH#EBL1	7	662.47	LG	2.4	5.3	0.6	2.6	0.54	0.37	0.56	0.06	0.63	0.09	0.32	0.030	0.35	0.040
91DCP-126	WEBLI	DH#EBL1	7	695.05	LG	3.5	7.4	0.9	3.7	0.84	0.53	0.81	0.12	0.94	0.16	0.57	0.052	0.51	0.051
91DCP-134	WEBLI	DH#EBL1	7	720.3	LG	2.6	5.6	0.6	2.7	0.61	0.36	0.65	0.08	0.71	0.13	0.37	0.032	0.41	0.046
91DCP-137	WEBLI	DH#EBL1	7	738.98	LG	2.8	5.8	0.7	3.0	0.64	0.44	0.65	0.09	0.70	0.14	0.42	0.037	0.43	0.045
91DCP-141	WEBLI	DH#EBL1	7	758.53	LG	3.8	8.2	0.9	3.9	0.80	0.48	0.92	0.13	0.97	0.18	0.56	0.052	0.63	0.070
91DCP-143	WEBLI	DH#EBL1	7	768.05	LG	7.7	16.4	2.0	8.3	1.95	0.69	2.12	0.31	2.21	0.47	1.30	0.192	1.26	0.197
91DCP-130	WEBLI	DH#EBL1	7	702.05	MG	12.3	26.2	3.1	12.9	2.96	0.57	3.25	0.50	3.30	0.77	2.11	0.289	2.09	0.306
91DCP-093	WEBLI	DH#EBL1	8	437.57	LG	3.0	6.8	0.8	3.5	0.66	0.36	0.80	0.09	0.73	0.15	0.44	0.032	0.48	0.043
91DCP-098	WEBLI	DH#EBL1	8	489.04	LG	3.0	6.8	0.8	3.3	0.78	0.40	0.83	0.11	0.89	0.16	0.53	0.059	0.55	0.055
91DCP-105	WEBLI	DH#EBL1	8	523.1	LG	2.7	5.8	0.7	2.8	0.73	0.40	0.67	0.09	0.72	0.13	0.41	0.036	0.38	0.040
91DCP-108	WEBLI	DH#EBL1	8	612.11	qG	17.4	40.3	4.3	17.5	3.49	0.74	3.43	0.51	3.55	0.73	2.33	0.319	2.46	0.338
91DCP-067	WEBLI	DH#EBL1	9	330.95	G	5.3	12.2	1.4	5.7	1.36	0.54	1.45	0.21	1.54	0.28	0.90	0.105	0.84	0.108
91DCP-077	WEBLI	DH#EBL1	9	364.79	G	6.4	14.0	1.7	6.9	1.57	0.58	1.54	0.25	1.79	0.33	1.07	0.136	1.02	0.123
91DCP-050	WEBLI	DH#EBL1	9	250.55	LG	4.3	9.7	1.1	4.7	1.00	0.50	1.00	0.15	1.12	0.20	0.68	0.063	0.64	0.076
91DCP-055	WEBLI	DH#EBL1	9	267.6	LG	5.5	12.2	1.5	6.1	1.48	0.58	1.44	0.21	1.57	0.29	0.89	0.117	0.86	0.110
91DCP-085	WEBLI	DH#EBL1	9	398	LG	4.1	9.0	1.1	4.8	1.17	0.52	1.23	0.18	1.32	0.26	0.84	0.089	0.82	0.096
91DCP-037	WEBLI	DH#EBL1	10	191.27	G	4.2	9.5	1.1	4.8	1.11	0.53	1.17	0.16	1.21	0.23	0.71	0.089	0.68	0.073
91DCP-033	WEBLI	DH#EBL1	10	175.95	LG	6.7	14.6	1.9	7.7	1.89	0.74	2.04	0.31	2.04	0.42	1.13	0.156	1.15	0.174
91DCP-031	WEBLI	DH#EBL1	10	168.36	OG	4.0	8.4	1.0	4.3	1.09	0.30	1.08	0.17	1.19	0.25	0.66	0.085	0.75	0.102
91DCP-034	WEBLI	DH#EBL1	10	181.84	OG	2.8	5.7	0.7	3.0	0.71	0.28	0.64	0.10	0.70	0.15	0.41	0.053	0.45	0.067
91DCP-038	WEBLI	DH#EBL1	10	197.07	OG	2.3	5.1	0.6	2.7	0.65	0.30	0.69	0.10	0.78	0.15	0.47	0.057	0.50	0.065
91DCP-041	WEBLI	DH#EBL1	10	209.40	OG	3.9	8.9	1.0	4.5	1.01	0.41	1.12	0.17	1.12	0.20	0.69	0.070	0.64	0.070
91DCP-022	WEBLI	DH#EBL1	11	103.88	LG	11.4	24.6	2.8	12.3	2.77	0.90	2.67	0.43	2.80	0.55	1.64	0.223	1.70	0.234
91DCP-026	WEBLI	DH#EBL1	11	154.30	LG	4.6	9.7	1.2	5.1	1.16	0.54	1.06	0.18	1.25	0.25	0.76	0.095	0.74	0.101
91DCP-009	WEBLI	DH#EBL1	12	47.63	LG	9.3	19.9	2.3	9.8	2.18	0.78	1.96	0.31	2.06	0.43	1.15	0.156	1.14	0.156
91DCP-018	WEBLI	DH#EBL1	12	85.70	OG	7.1	15.1	1.9	8.2	2.20	0.69	2.48	0.40	2.60	0.57	1.60	0.221	1.58	0.230
91DCP-001	WEBLI	DH#EBL1	13	4.23	G	6.2	13.4	1.7	7.2	1.77	0.61	1.80	0.31	1.99	0.39	1.21	0.160	1.17	0.164
91DCP-160	WEBLI	DH#EBL1	14a	844.65	D	17.8	41.4	5.0	22.8	5.53	1.73	6.05	0.95	6.02	1.36	3.71	0.534	3.55	0.470
90DCP-210	WEBLI	Folson Lk	14a	-	G	11.0	25.1	3.0	13.1	2.81	1.02	3.22	0.50	3.42	0.70	1.99	0.281	1.91	0.257
90DCP-018	WEBLI	Hwy 553	14b	-	yD	7.2	16.1	1.9	8.4	2.17	0.71	2.46	0.36	2.61	0.58	1.70	0.217	1.54	0.198
91DCP-149	WEBLI	DH#EBL1	14b	783.5	yD	7.2	16.9	2.2	10.3	2.80	0.98	3.31	0.56	3.57	0.76	2.10	0.296	2.04	0.262
90DCP-302	EEBLI	Site 5	14b	-	yD	7.6	18.5	2.3	11.0	2.76	1.02	3.31	0.53	3.80	0.82	2.28	0.308	2.30	0.319
90DCP-305	EEBLI	Site 5	14b	-	yD	10.0	23.4	3.1	14.4	3.84	1.18	4.58	0.70	5.01	1.06	2.92	0.414	2.58	0.335
91DCP-291	EEBLI	Nodule Pond	14b	-	yD	6.4	15.1	2.0	7.6	1.87	0.61	2.06	0.34	2.17	0.46	1.34	0.20	1.24	0.20
90DCP-438	TLI	Tee Lk	17	-	G	3.3	7.3	0.9	4	1.20	0.40	1.26	0.23	1.66	0.34	0.92	0.138	0.96	0.137
90DCP-472	SLI	Splake Lk	17	-	G	3.6	7.8	1.0	4.4	1.41	0.47	1.70	0.29	2.03	0.43	1.16	0.182	1.25	0.178

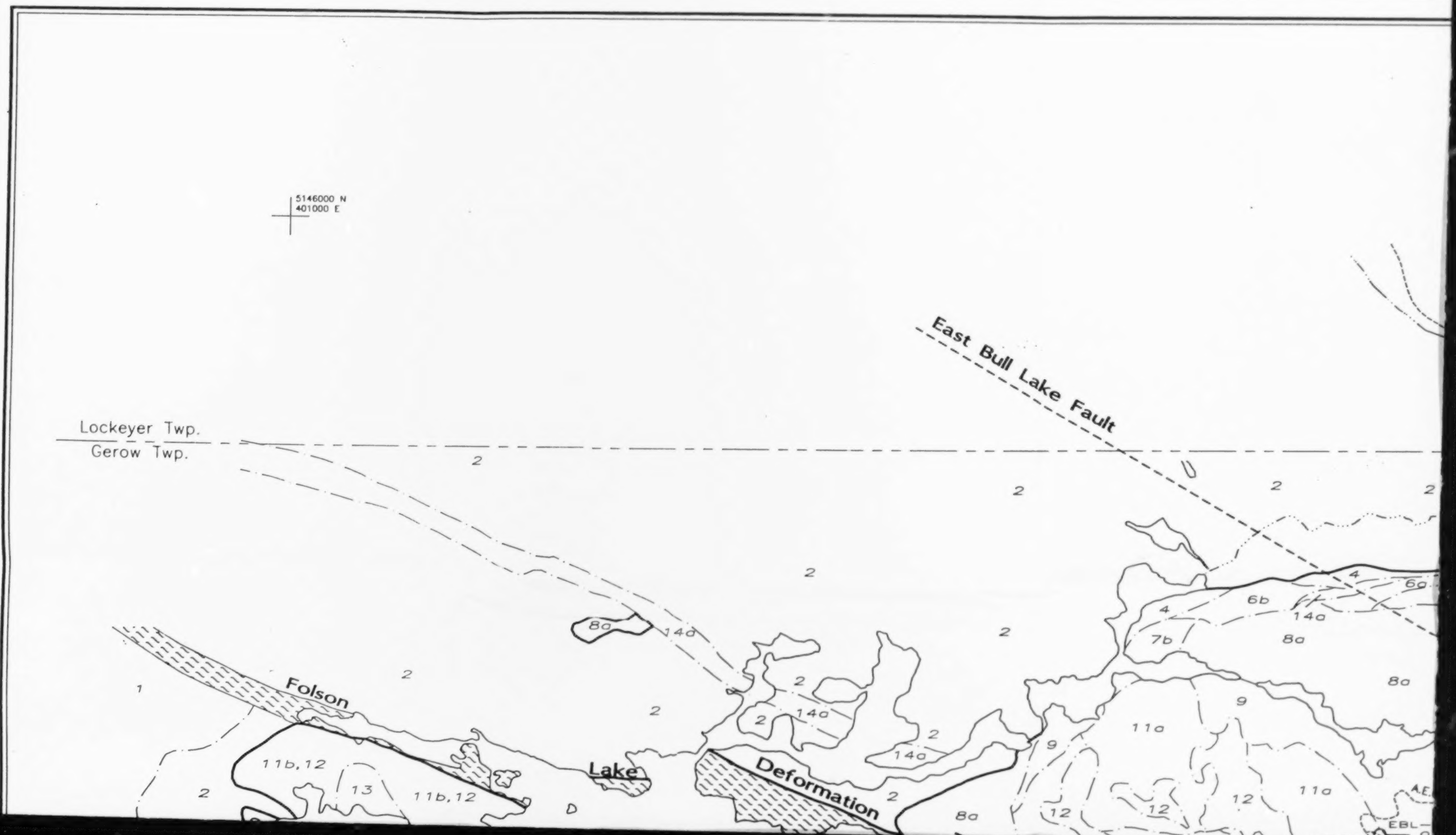
CONVERSION FACTORS FOR MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

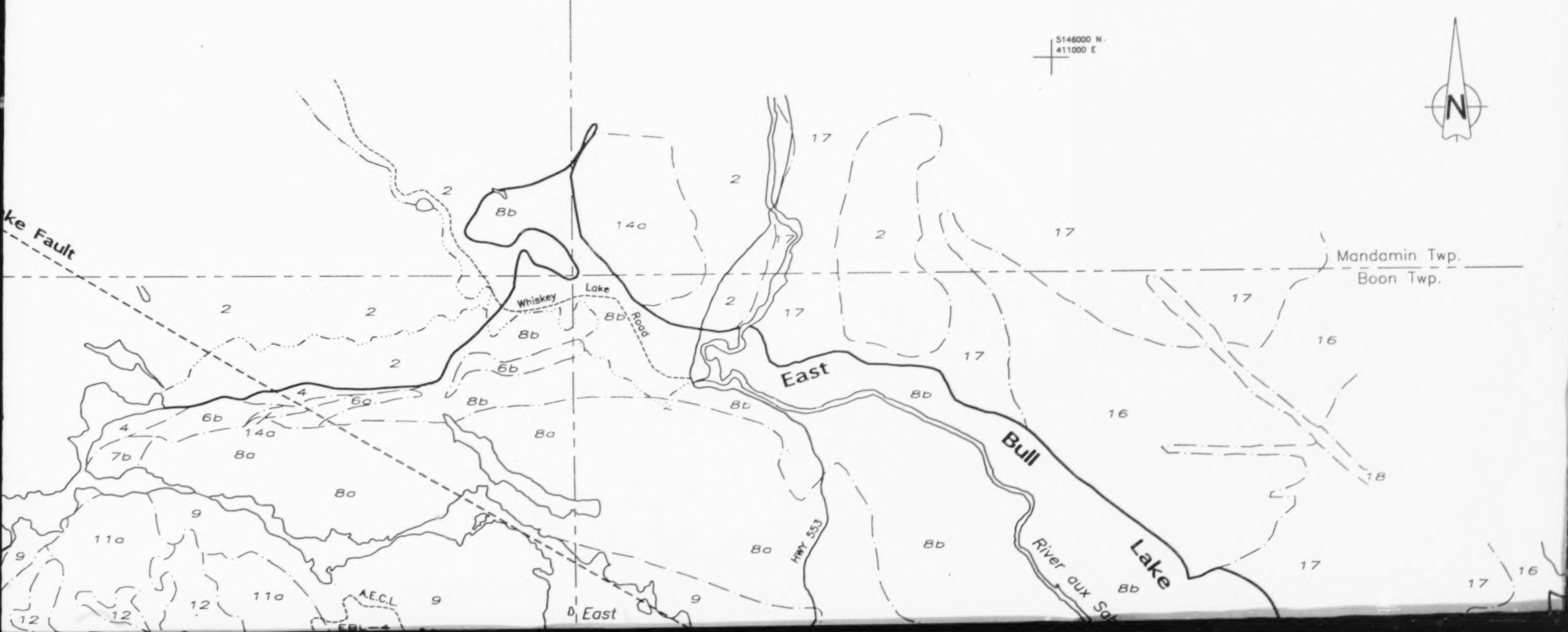
Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709 7	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 02	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.308 0	cubic yards	1 cubic yard	0.764 555	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 96	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 75	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 62	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 908 8**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.


5146000 N
401000 E
Lockeyer Twp.
Gerow Twp.
East Bull Lake Fault
Folson
Lake
Deformation
1
2
4
6a
6b
7b
8a
9
11a
11b,12
12
13
14a
EBL


5146000 N.
411000 E
N
ke Fault
Mandamin Twp.
Boon Twp.
Whiskey
Lake
Road
East
Bull
Lake
HWY 553
River aux Sa
A.E.C.L.
EBL-4
East
2
2
2
2
2
2
2
8b
8b
8b
8b
8b
8b
8b
8b
8a
8a
8a
8a
14a
14a
6b
6b
6a
4
4
7b
9
9
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11a
11a
12
12
12
17
17
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17
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17
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16
16
18

LEGEND

PROTEROZOIC

Post-Huronian Mafic Intrusions

- 18 **Olivine Diabase**
- 17 **Nipissing Gabbro**

HURONIAN SUPERGROUP

- 16 **Metasediments (unsubdivided)**

Pseudotachylyte

- 15 **Breccia Dyke (age uncertain)**
- 14 **Pre-Huronian Mafic Dykes**
  - 14c Aphyric diabase
  - 14b Plagioclase phyric diabase
  - 14a Gabbronorite

EAST BULL LAKE INTRUSION

Upper Series

- 13 **Massive Gabbronorite**
- 12 **Vari-Textured Gabbronorite**
- 11 **Layered Gabbronorite Zone**
  - 11b Western subzone (west of Folson Lake Fault)
  - 11a Eastern subzone (east of Folson Lake Fault)

Main Series

- 10 **Olivine Gabbronorite Zone**
- 9 **Rhythmically Layered Zone**
- 8 **Leucogabbronorite Zone**
  - 8b Massive leucogabbronorite
  - 8a Massive to layered leucogabbronorite

Lower Series

- 7 **Anorthosite Zone**
  - 7b Massive anorthosite
  - 7a Nodular anorthosite
- 6 **Inclusion Bearing Zone**
  - 6b Inclusion bearing leucogabbronorite
  - 6a Inclusion bearing gabbronorite

Marginal Series

- 5 **Gabbronorite Zone**
- 4 **Border Zone**

ARCHEAN

Intermediate to Felsic Intrusions and Gneisses

- 3 **Parisien Lake Syenite**
- 2 **Ramsey Algoma Granitoids**

Mafic to Felsic Metavolcanics

- 1 **Whiskey Lake Greenstone Belt (unsubdivided)**

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LEGEND

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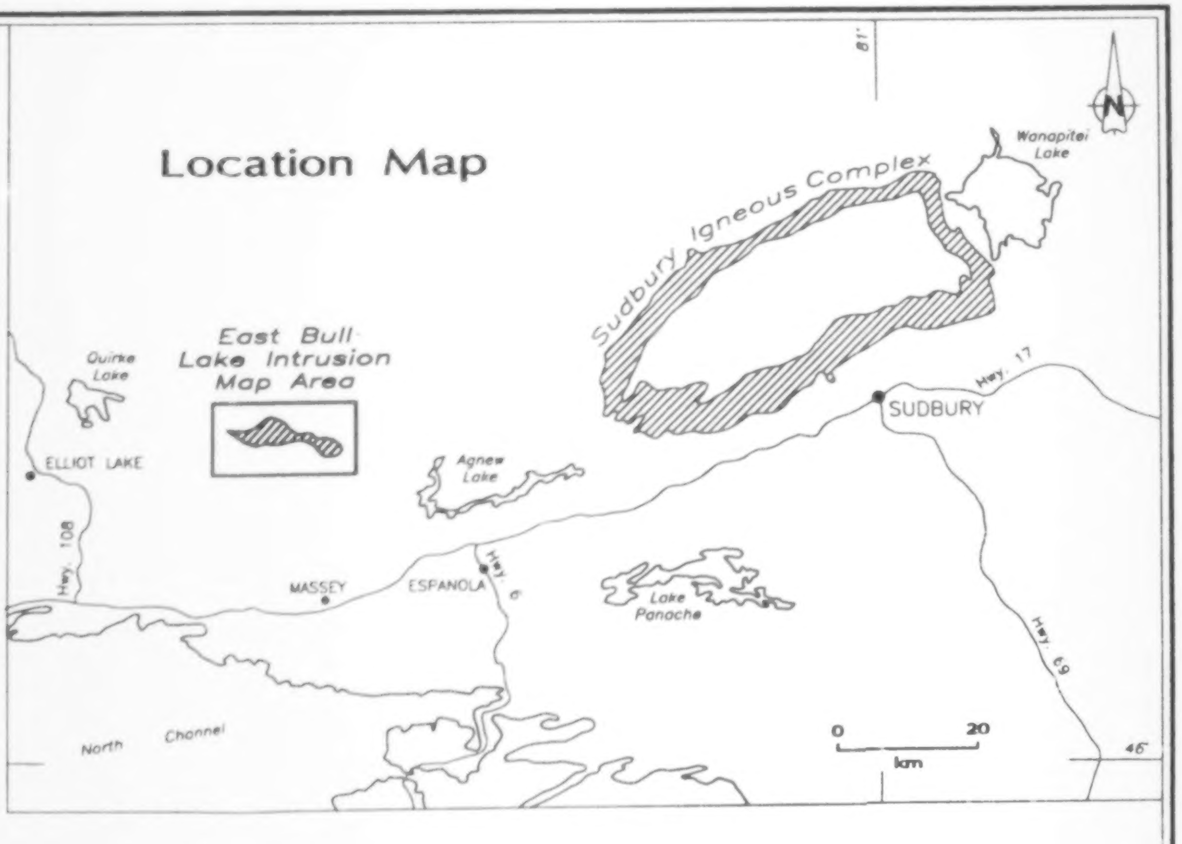


Ministry of
Northern Development
and Mines
Ontario

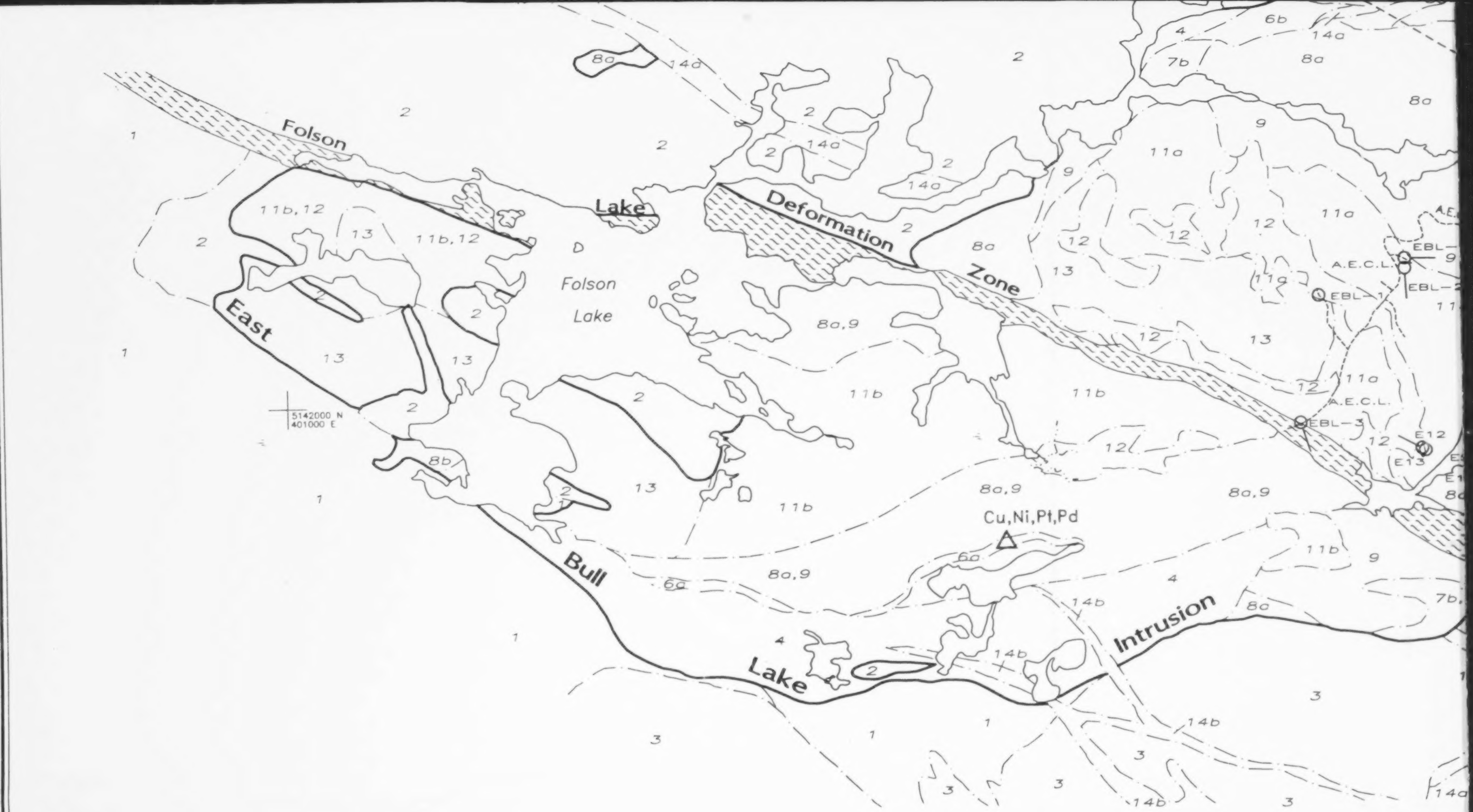
Mines and Minerals Division
Ontario Geological Survey

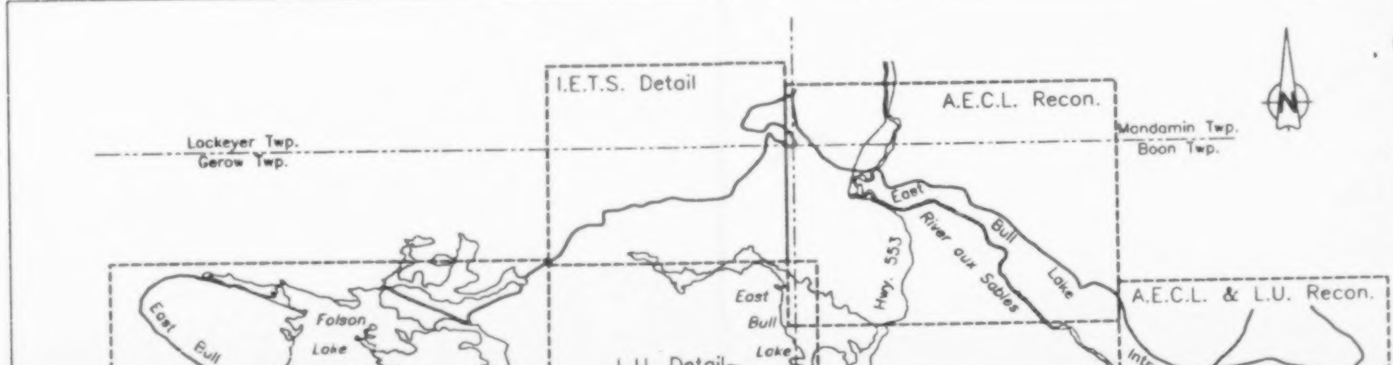
Map P.3274

PRECAMBRIAN GEOLOGY

EAST BULL LAKE GABBRO ANORTHOSITE INTRUSION

Scale 1:20 000





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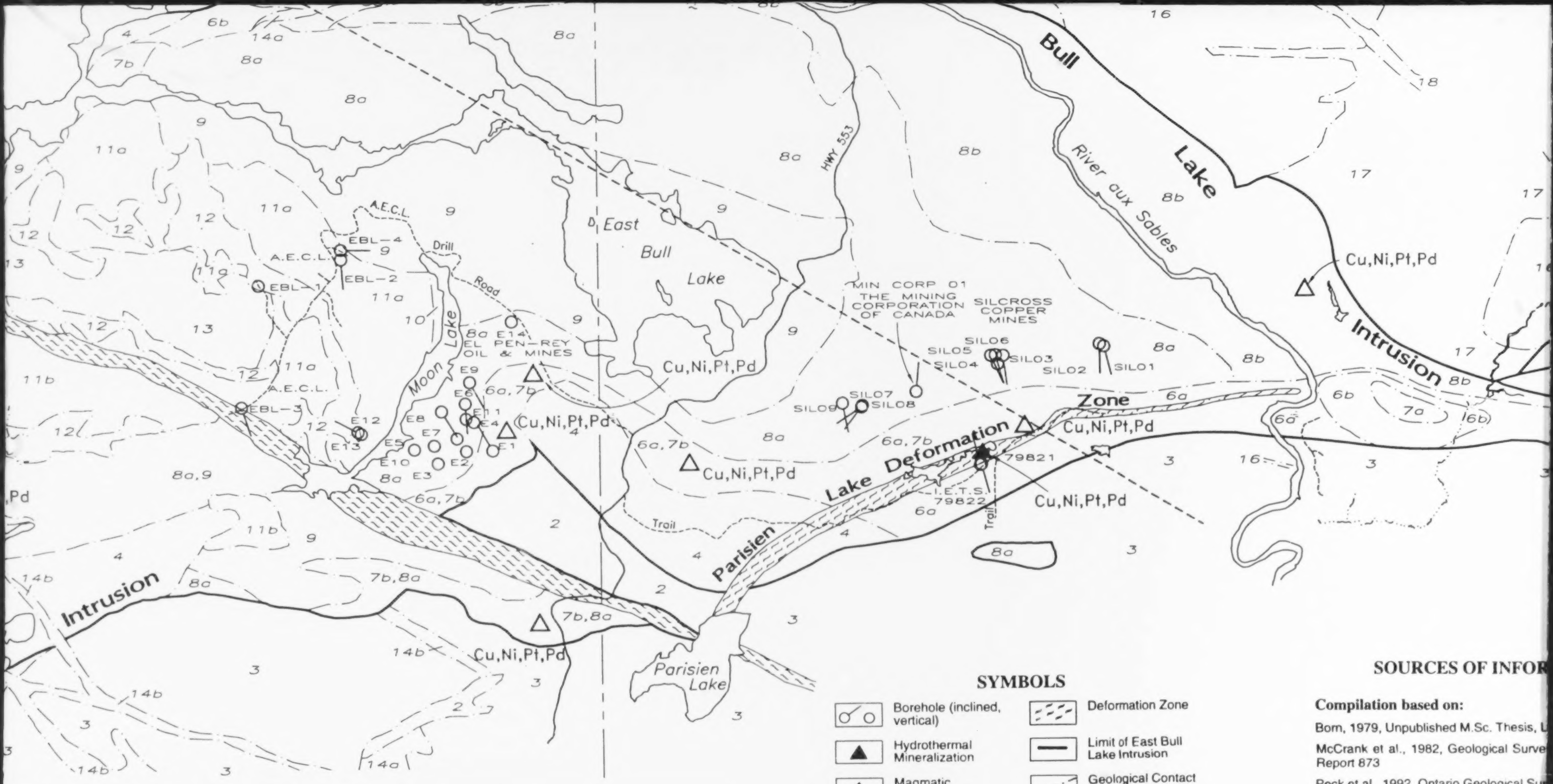
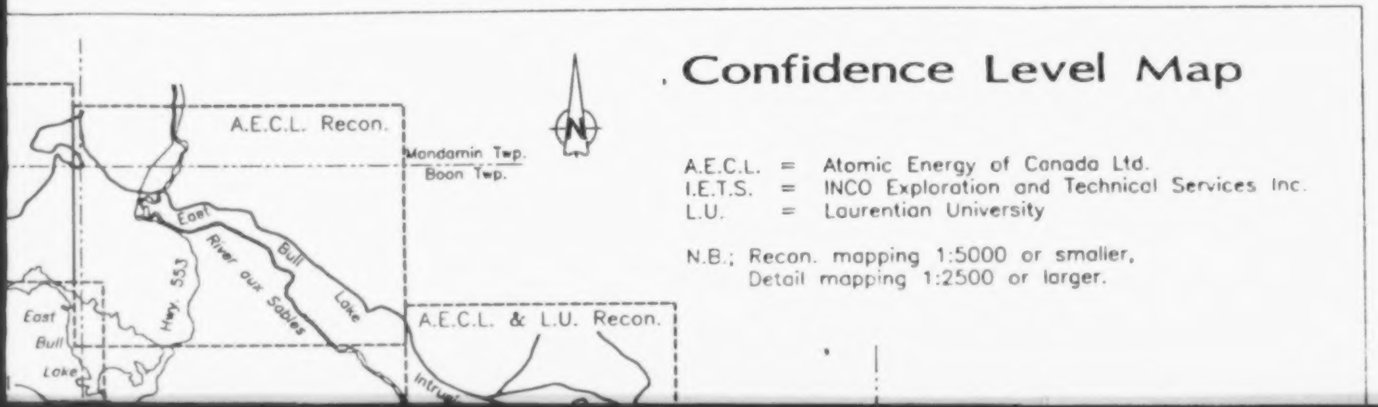
I.E.T.S.

L.U.

N.B.:





Confidence Level Map

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L.U. = Laurentian University

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Hannila, 1993, INCO Exploration and Unpublished Mapping

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ABBREVIATIONS

Cu copper Pt platinum

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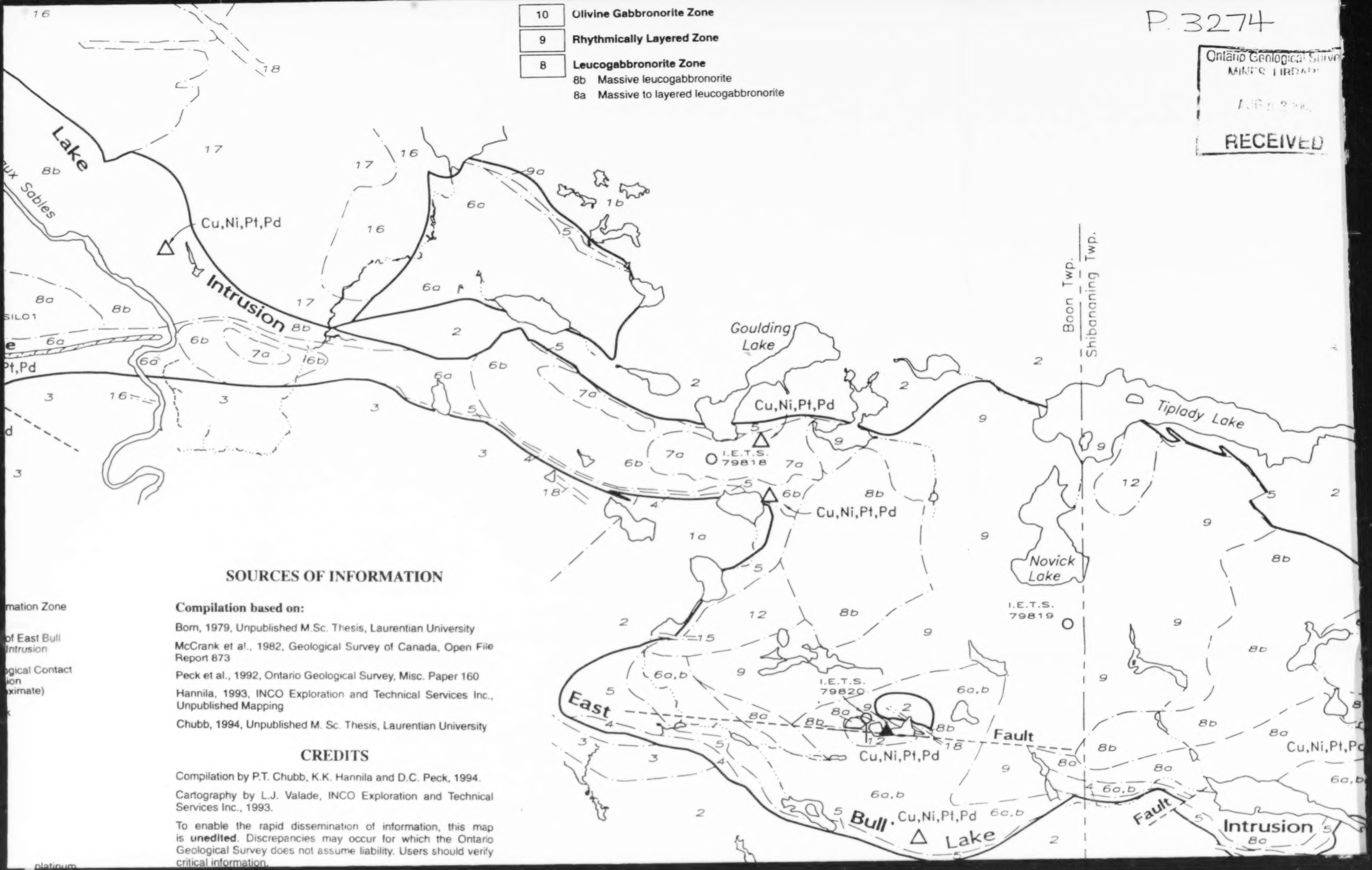

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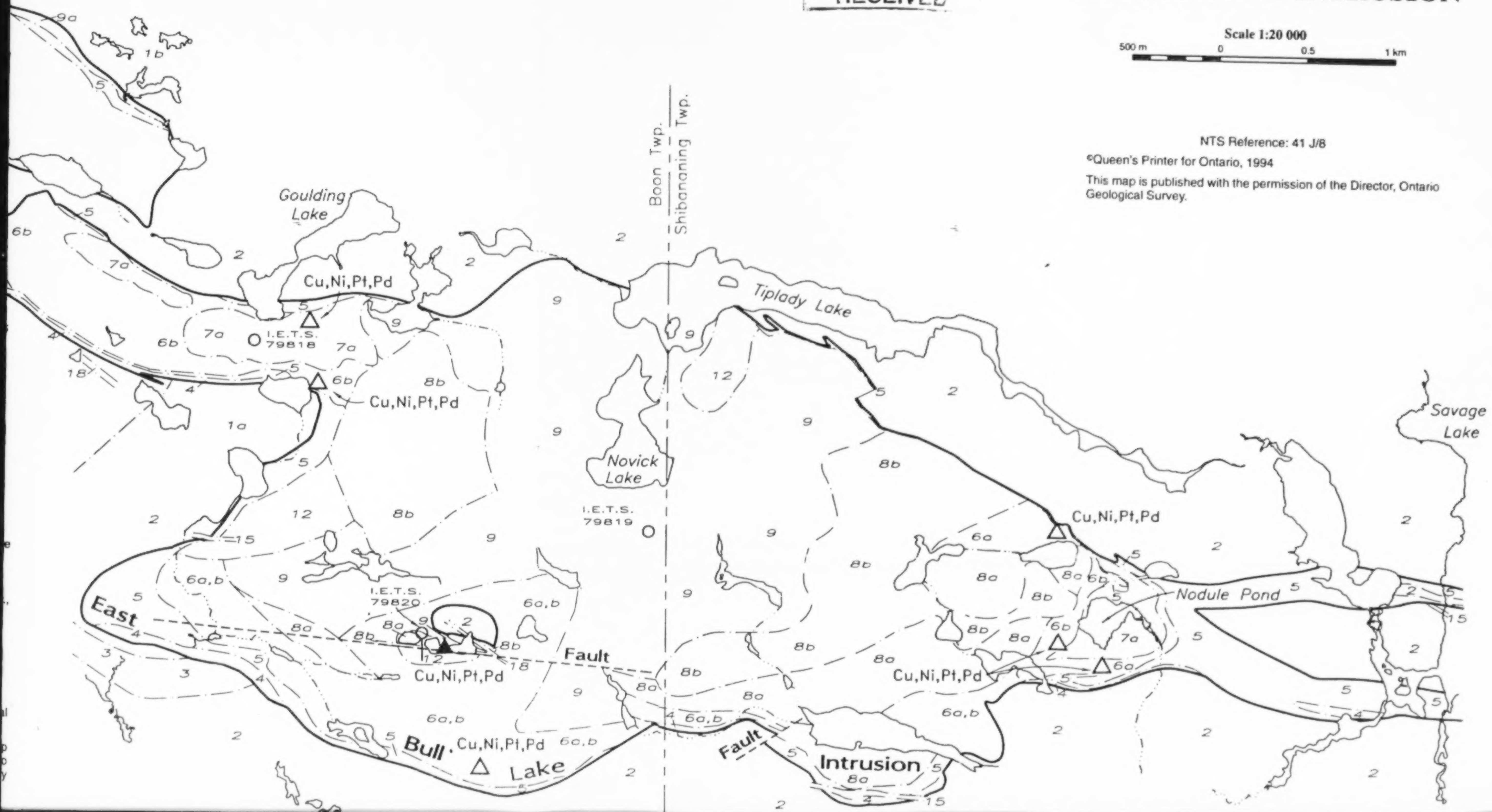
PRECAMBRIAN GEOLOGY

EAST BULL LAKE GABBRO ANORTHOSITE INTRUSION

Scale 1:20 000

500 m 0 0.5 1 km



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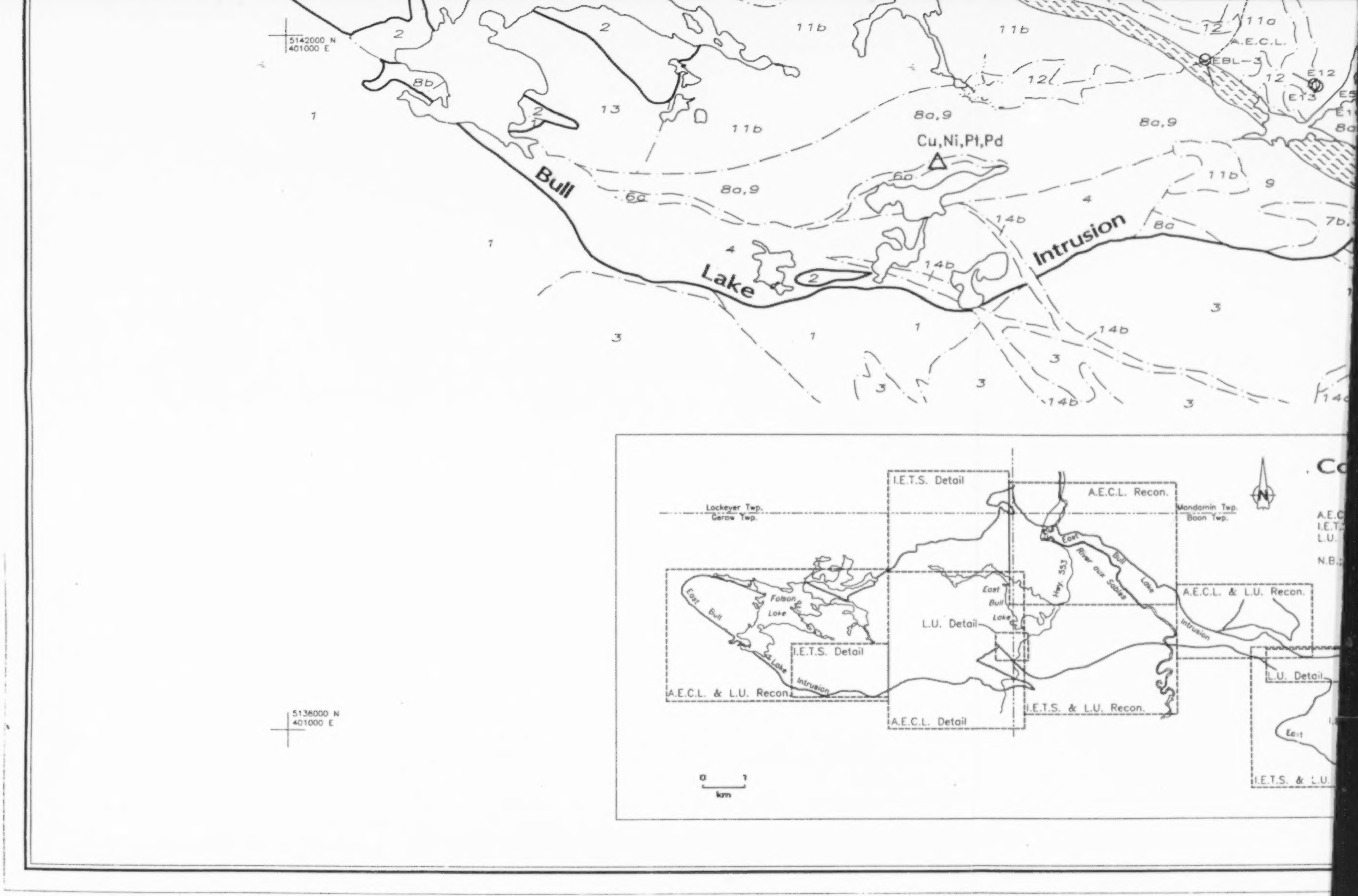
5142000 N
401000 E
Bull Lake Intrusion
Cu,Ni,Pt,Pd
EBL-3
A.E.C.L.
E12
E13
1
2
3
4
6a
8a
8b
8a,9
9
11a
11b
12
13
14b
5138000 N
401000 E
I.E.T.S. Detail
A.E.C.L. Recon.
Lockeyer Twp.
Gerow Twp.
Mondamin Twp.
Boon Twp.
N
East Bull Lake Intrusion
Folson Lake
L.U. Detail
East Bull Lake
Hwy. 553
East River aux Sables
A.E.C.L. & L.U. Recon.
A.E.C.L. Detail
I.E.T.S. & L.U. Recon.
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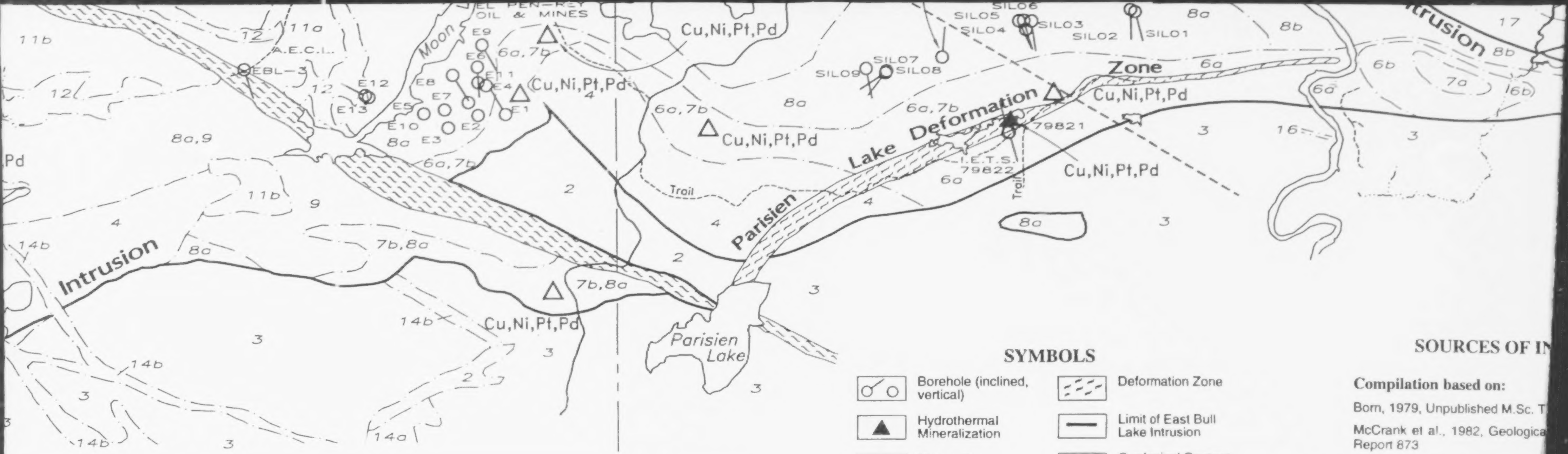

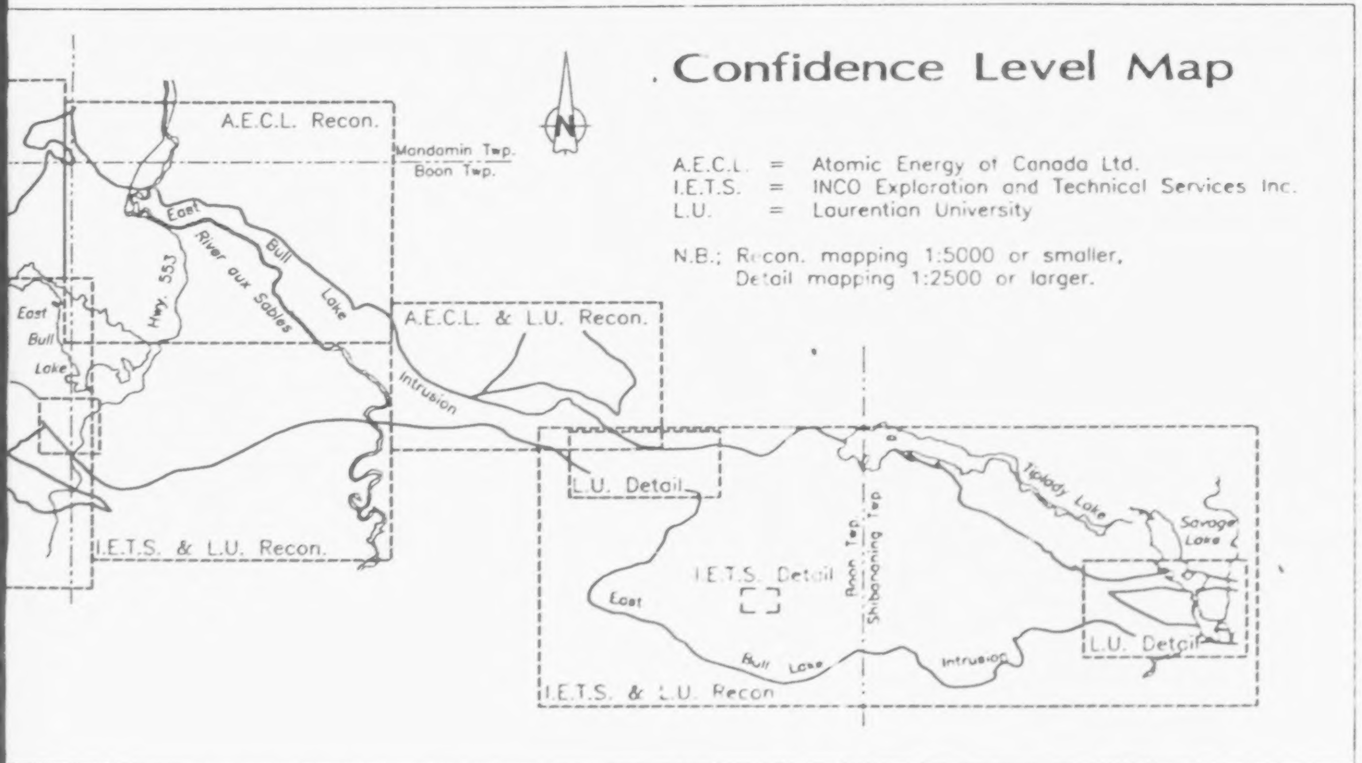

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SYMBOLS

⌀ ○	Borehole (inclined, vertical)	▨	Deformation Zone
▲	Hydrothermal Mineralization	—	Limit of East Bull Lake Intrusion
△	Magmatic Mineralization	-·-	Geological Contact (position approximate)
- - -	Fault	~	Creek

ABBREVIATIONS

Cu	copper	Pt	platinum
Ni	nickel	Pd	Palladium

BOREHOLE REFERENCE

EBL-1	Atomic Energy of Canada Ltd.
I.E.T.S. 79818	INCO Exploration and Technical Services Inc.
E1	El Pen-Rey Oil and Mines
MIN CORP 01	The Mining Corporation of Canada
SILO1	Silcross Copper Mines

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Peck et al., 1992, Ontario Geolog

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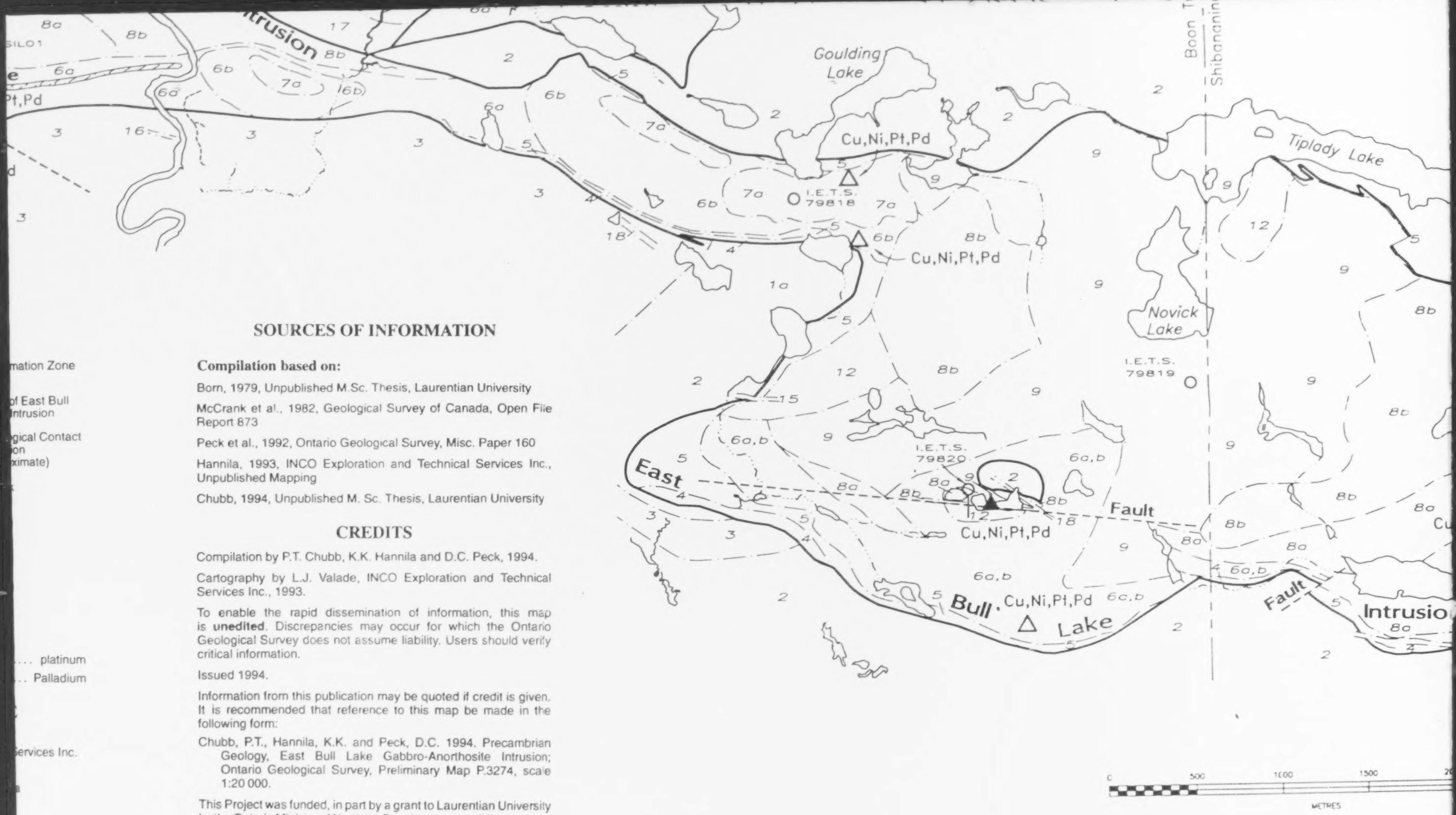

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